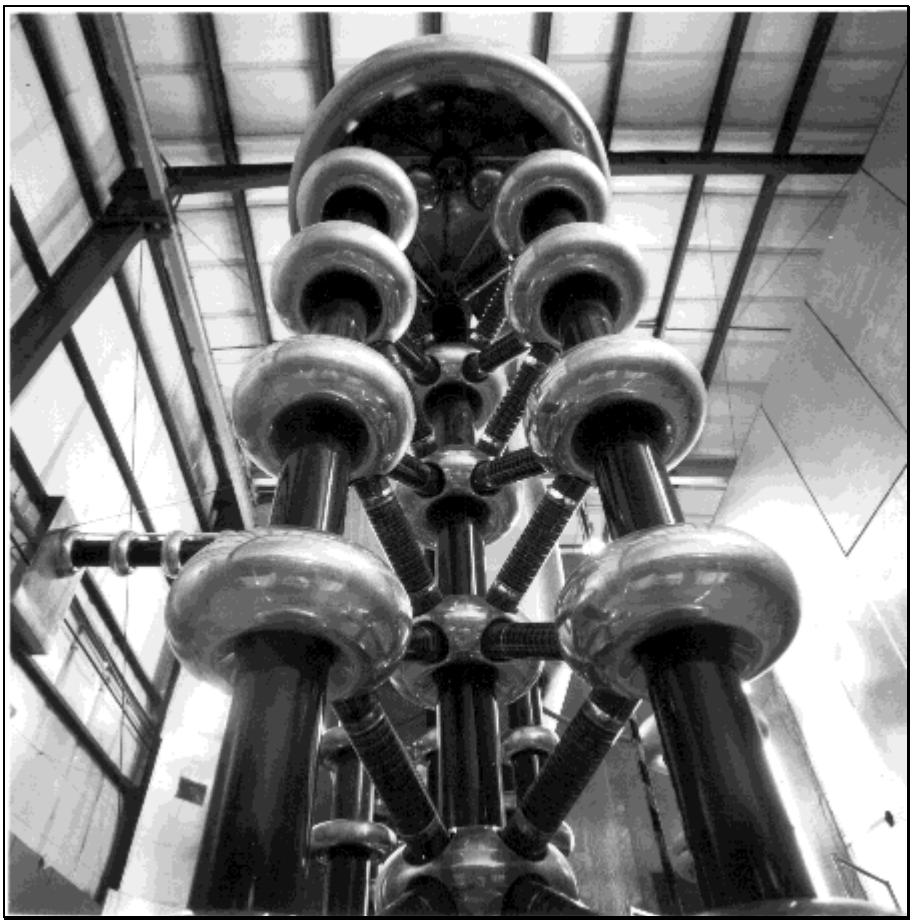
Condition Assessment Information Survey (CAIS)

User Manual



Release 1.2

April 2001

Table of Contents

Section **Page**

Section **Page**

List of Figures

Figure **Page**

Figure **Page**

Figure **Page**

1 Overview

This document provides an overview of the Department of Energy (DOE) Condition Assessment Information Survey (CAIS) 2000 application. It is designed for experienced engineers or technicians familiar with facility and infrastructure inspection procedures and terminology. This training program will instruct the inspectors on the use of system protocols and the procedures for loading and reporting data in CAIS. It will not cover inspection techniques or processes.

2 Background

DOE is mandated to maintain a constant awareness of the condition of its facilities across the U.S. Sites have conducted facility assessments using a variety of tools and techniques, resulting in a great variance in the level of analysis. Some Sites report in exhaustive detail, whereas others provide only high-level summary information. DOE has sponsored the development of CAIS to provide the Sites with an agency-wide standard for reporting Site assessments. Site CAIS, CAIS 3.x, and now CAIS 2000 are tools that support DOE inspection methodologies and provide the Sites with a reliable, consistent approach to gathering and reporting deficiencies.

The CAIS 2000 application provides automated assistance for the CAS program. CAIS supports the collection, costing, and reporting of condition assessment data.

Inspectors use CAIS to capture condition assessment data from DOE facilities located throughout the U.S. CAIS users can apply costing functions to inspection data to determine estimated costs to repair the deficiencies. CAIS accommodates locally defined supplemental costs for completing the repair under special conditions (unique security requirements, hazardous environment, etc.), and adjustments can be made to compensate for variations in local labor and material costs. Output from CAIS provides Site managers with a standardized basis for supporting funding requests.

CAIS 2000 consists of the following modules that support inspection, costing, and reporting:

- Inspection
- Assets
- Reporting
- Costing

3 New Concepts

The original design for CAIS 3.x was intended to capture a site's deficiencies and assign costs to those deficiencies (usually for a yearly report or for several years for long term planning). CAIS 3.x achieves this objective; however, new requirements have arisen. The software has evolved from a DOE-mandated reporting tool to a system that can continually record deferred maintenance and manage deficiencies and their costs. The ability to manage the life cycle of site assets has been requested by the Condition Assessment Survey (CAS) user community, and CAIS 2000 provides the foundation for this activity. CAIS 2000 has been designed to reduce the number of data tables from that required in previous versions while simplifying data entry.

Like predecessor databases for CAIS, the new design is also modeled to support the DOE Inspection Methods and Deficiency Standards hierarchy, which states that an **Asset** (building, road system, bridge) contains **Work Breakdown Structures** (WBSs - roofing, electrical systems, mechanical systems) that contain **Components** (roof-membrane, flashing, insulation) that are of specific **Types** (2-4 ply non-insulated roof membrane).

4 Definitions

Asset – a building, structure, facility, or piece of equipment (or logical subdivision of these) that is subject to the CAS inspection process.

WBS – Work Breakdown Structure; a hierarchical, industry standard, classification method of defining systems and sub-systems within an asset. For example, the high-level system ROOFING contains 10 sub-systems including “BUILT-UP MEMBRANE”, “SINGLE-PLY MEMBRANE”, “METAL ROOFING SYSTEMS”, etc.

Component – a subdivision of the WBS that provides increasing detail. For example, the components of a roof’s “BUILT-UP MEMBRANE” WBS might include “FLASHING”, “MEMBRANE”, or “INSULATION”. CAIS supports the recording of deficiencies at the component level (for example, *torn* FLASHING, *punctured* MEMBRANE, etc.).

Component Type – Components can contain additional information that usually specifies material or construction detail (i.e., *copper* FLASHING). The types also have the attached costing information.

Inspection Unit – An IU is a data composite that is utilized by CAIS to support costing and other functions. RS Means publishes annual CAIS compatible costing data that is defined by the IU. This data is utilized by CAIS in its costing algorithms.

5 Starting CAIS

Use the following procedure to start CAIS.

1. Select the **CAIS icon** located on your desktop. The **CAIS Logon** window appears as shown in Figure 1.

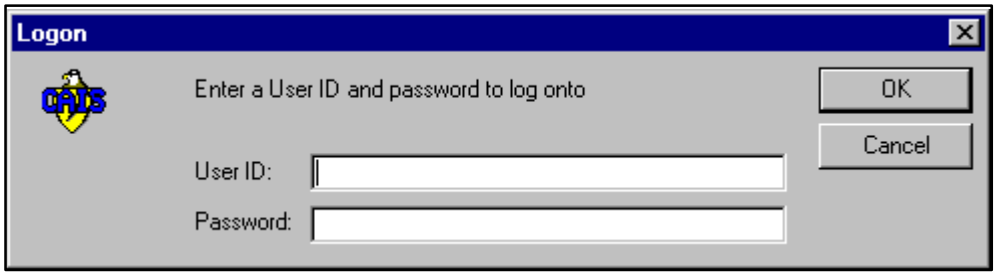


Figure 1 CAIS Login Window

2. Select the **User ID** field and type your **User ID**.
3. Select the **Password** field and type your **Password** (asterisks appear).
4. Click on **OK**. The **CAIS Main** window appears as shown in Figure 2.

   If an error message appears, some of the information was typed incorrectly. Select **OK**, and log on again.

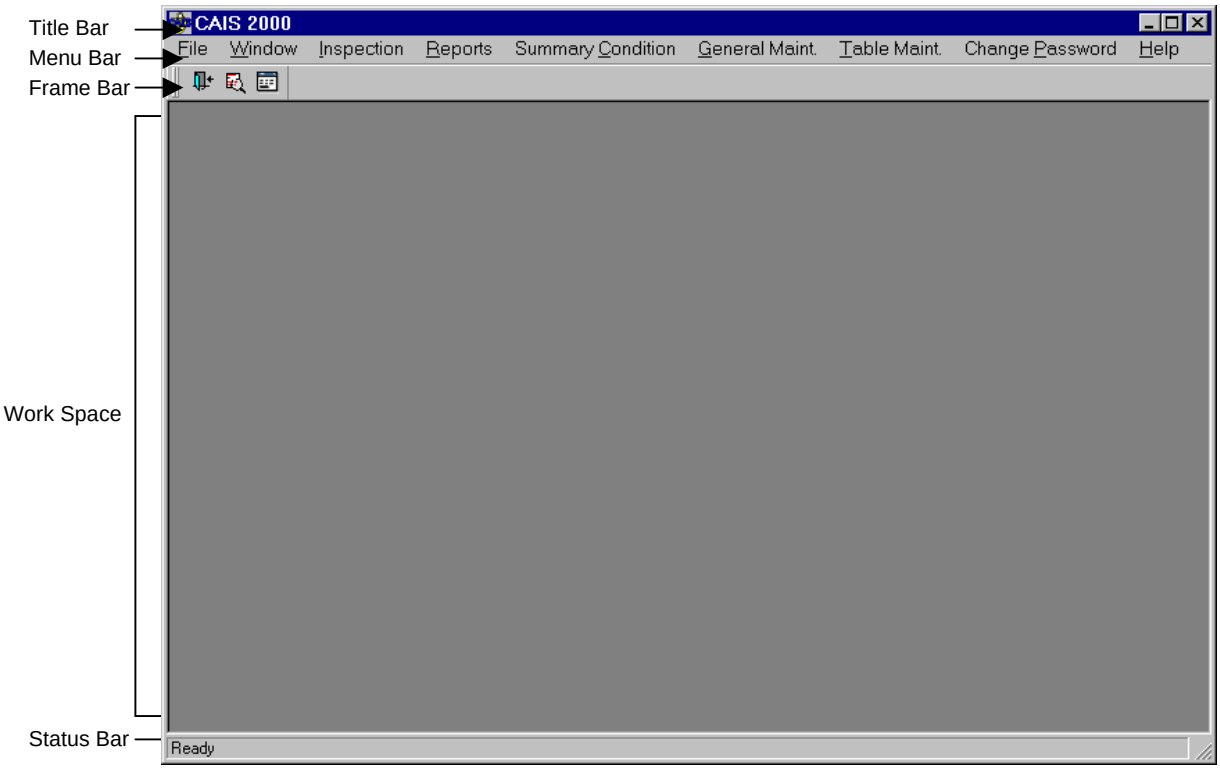


Figure 2 The CAIS Main Window

The **CAIS Main** window comprises five areas:

- Title Bar: Displays the window title. Also contains buttons for minimizing/maximizing window size and closing the window.
- Menu Bar: Displays the drop-down menus. From a drop-down menu, select [▸] to open a submenu.
- Frame Bar: Displays icons that perform the same functions as the options available on the drop-down menus.
- Work Space: Data windows and messages appear in this area.
- Status Bar: Displays system status messages.

6 Exiting CAIS

After saving any entries/changes to the system, exit CAIS in one of the following ways:

- Select **File/Exit** from the menu bar.
- Select  in the title bar.
- Select  in the frame bar.
- Simultaneously press **[Alt][F4]**.

7 CAIS Main Window Menu Contents

7.1 The File Menu

Use the **File** menu, shown in Figure 3, to create or access records, print a window, access the toolbar, or exit CAIS.

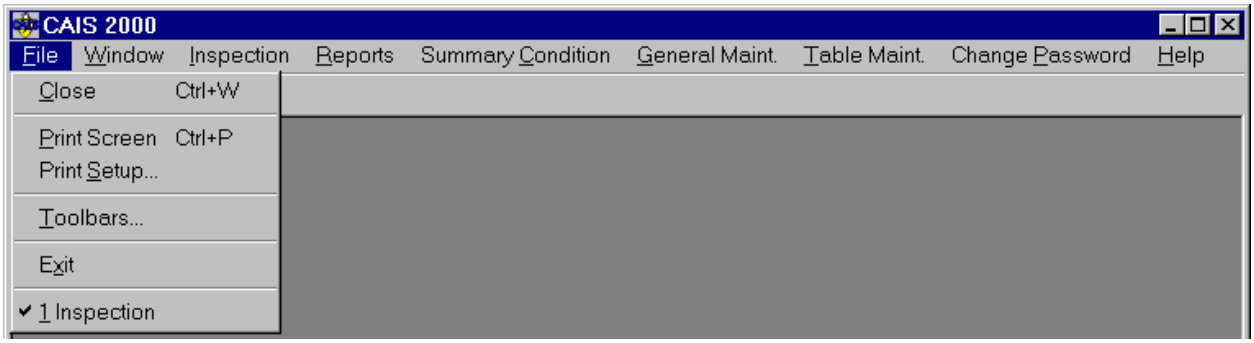


Figure 3 The File Drop-Down Menu

7.1.1 Close

Select **File/Close** to close the open record.

7.1.2 Print

Select **File/Print** to print the open record.

7.1.3 Print Setup

Select **File/Print Setup** to open the list of available printers like the one shown in Figure 4. Select the desired printer, and then click on **OK**. Click on **Setup** to change a printer's parameters.

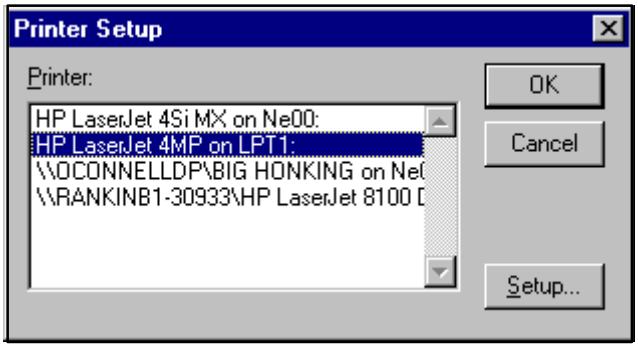


Figure 4 The Printer Setup Window

7.1.4 Toolbars

Select **Toolbars** to open the **Toolbar** window shown in Figure 5, which enables you to change the frame bar format.

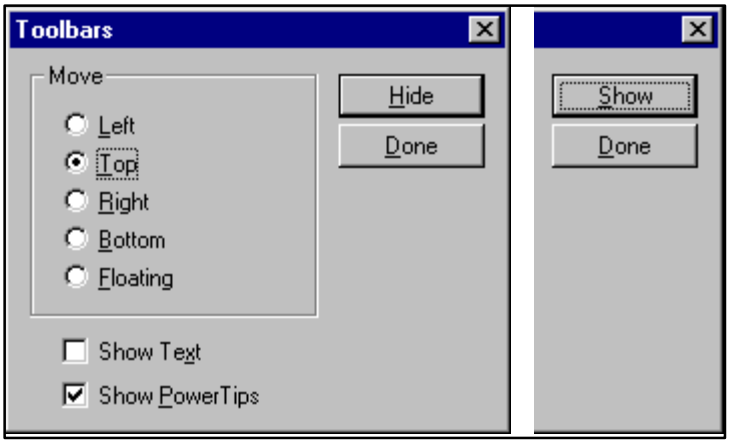


Figure 5 The Toolbars Window

The buttons in the **Move** field allow you to change the location of the frame bar.

If you activate **Show Text** (a check appears in the box), labels appear under the icons.

If you activate **Show Power Tips**, a descriptive pop-up caption appears when you leave the cursor positioned over an icon.

If the frame bar is visible, the button above **Done** will read **Hide**. Click on **Hide** to remove the frame bar. If the frame bar is not visible, this button reads **Show**. Click on it to open the frame bar.

7.1.5 Exit

Select **File / Exit** to close CAIS.

On the frame bar, click on  to close CAIS.

7.2 The Window Menu

Use the **Window** menu, shown in Figure 6, to organize the display of multiple open windows.

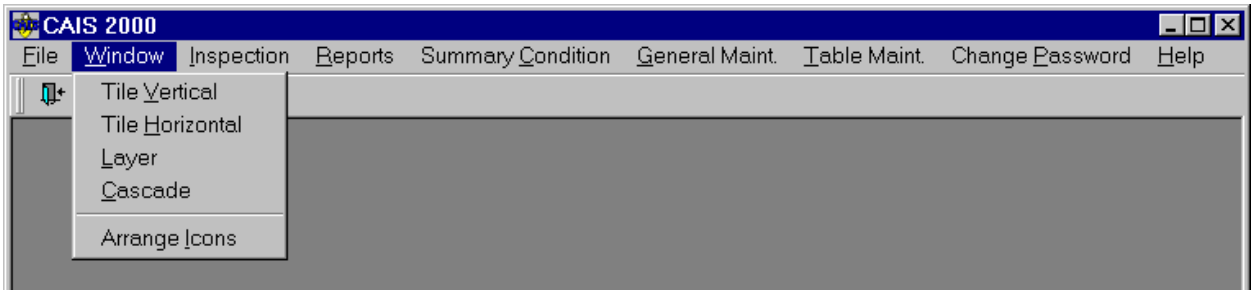


Figure 6 The Window Drop-Down Menu

7.2.1 Tile Vertical

Select **Window/Tile Vertical** to vertically display several open windows as shown in Figure 7.

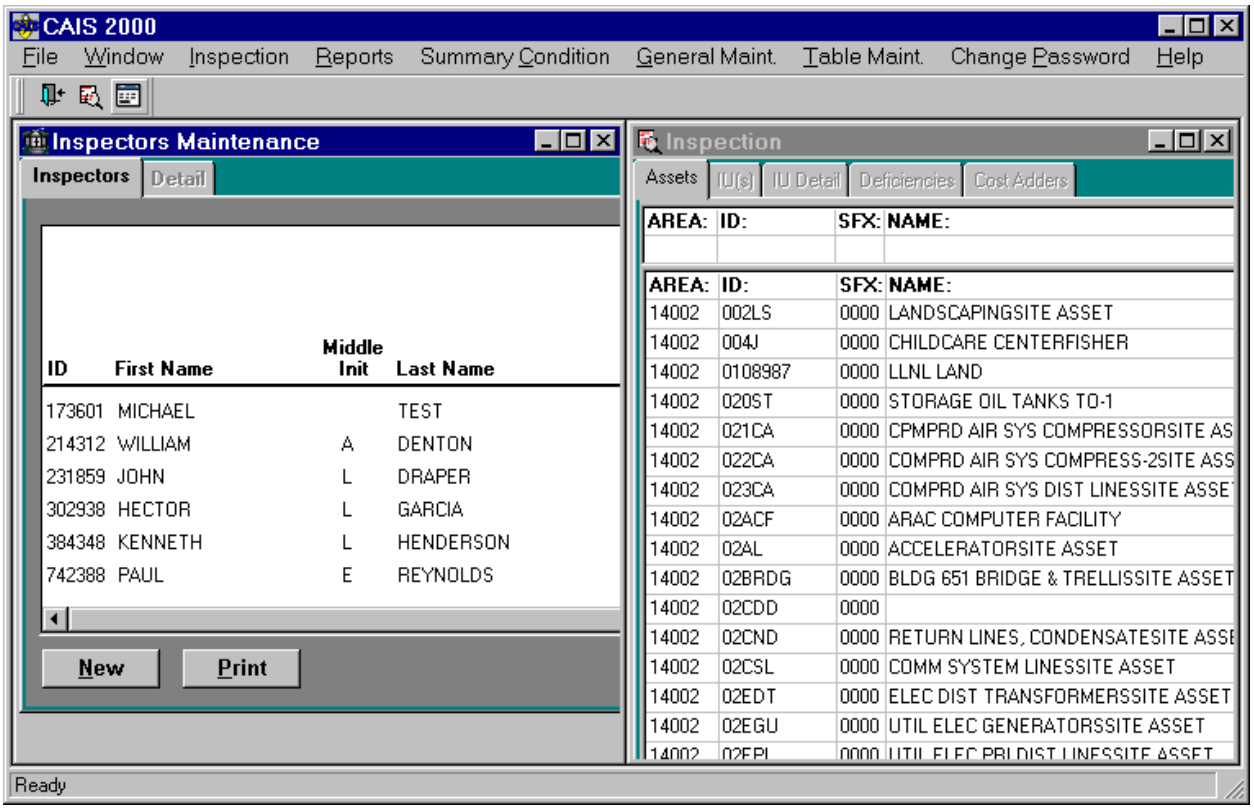


Figure 7 Vertically Positioned Windows

7.2.2 Tile Horizontal

Select **Window/Tile Horizontal** to horizontally display several open windows as shown in Figure 8.

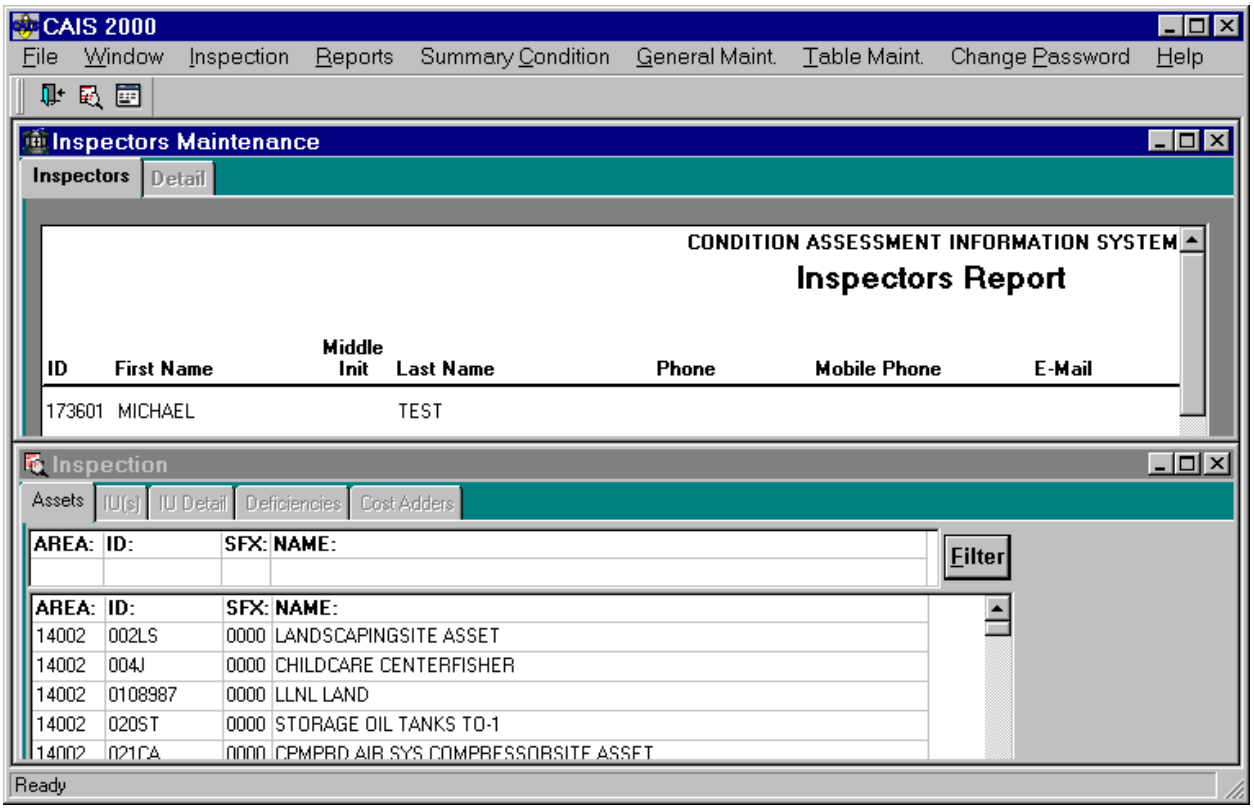


Figure 8 Horizontally Positioned Windows

7.2.3 Layer

Select **Window/Layer** to display only the active window.

Note: When **Layer** is chosen, all open windows are still running behind the displayed window. To view another open window, select the **Window** menu to reveal a list of all open windows, and then select the desired window.

7.2.4 Cascade

Select **Cascade** to overlap open windows so the title bar of each window appears as shown in Figure 9.

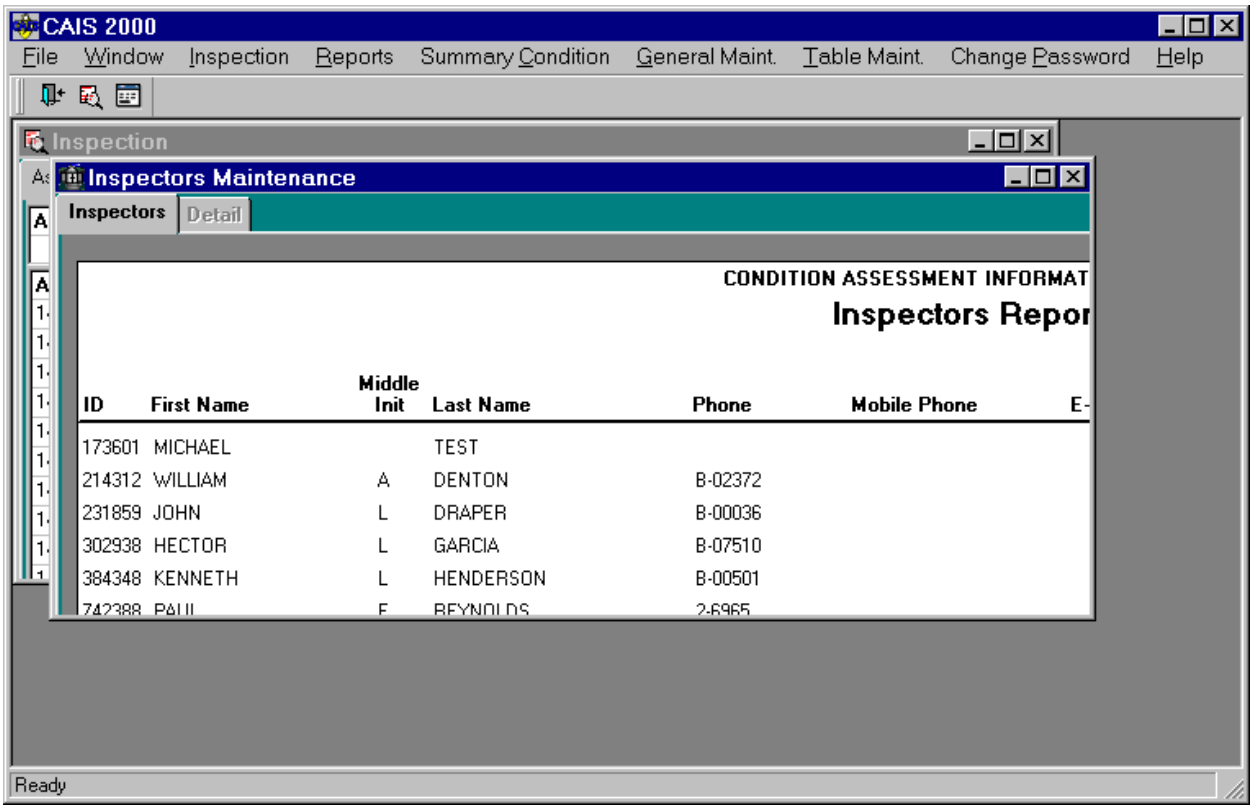


Figure 9 Cascading Windows

7.3 The Inspection Menu

7.3.1 The Asset Window

The Inspection module enables you to select, edit, or add deficiency information for facility assets. All deficiency information is linked to its specific asset for tracking and reporting purposes.

Select **Inspection** on the menu bar to open the Inspection function. An **Inspection - Assets** window similar to the one shown in Figure 10 opens.

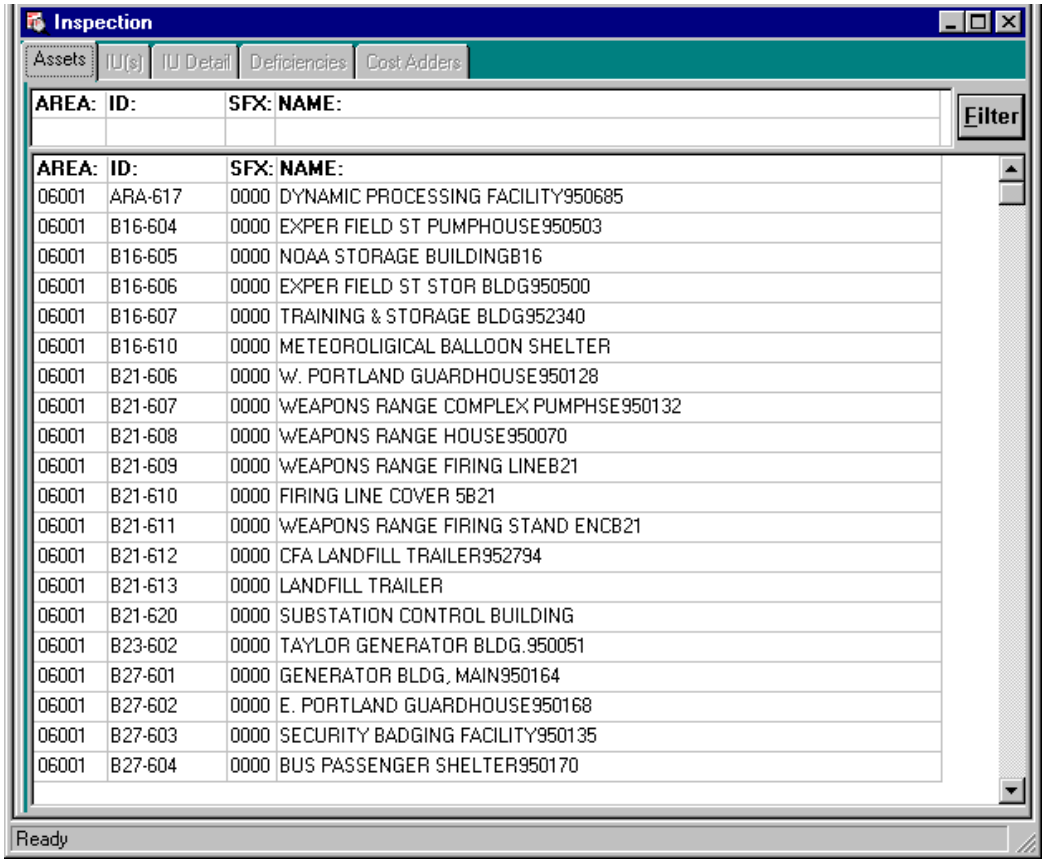


Figure 10 The Inspection - Assets Window

This window comprises four columns and the Filter button:

- Area: The numeric code for the asset location.
- ID: The identification code for the asset.
- SFX: The numeric suffix (if any) for the asset.
- Name: The asset name.

- Filter Button: Use this button to filter out unneeded data. Enter the desired parameter on the blank line to the left of the button, and then click the button. The table will now display only the data that contain the parameter you entered.

  For example, using the data from Figure 10, you want to see only assets containing "B21" in their ID. Type B21 in the ID field as shown in Figure 11. Then click on the Filter button. Figure 12 shows the result. Note that all IDs contain B21.

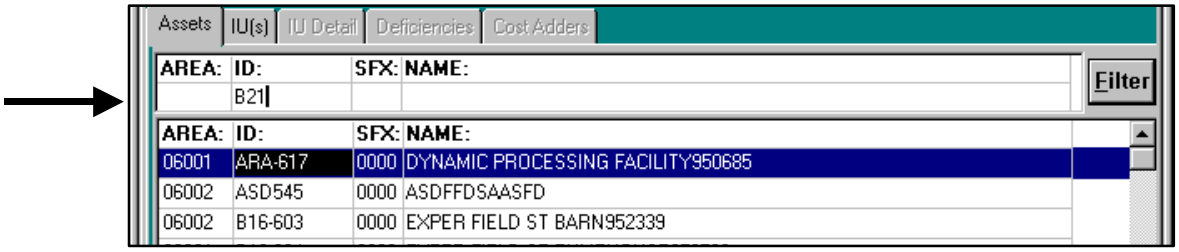


Figure 11 Filtering for ID B21

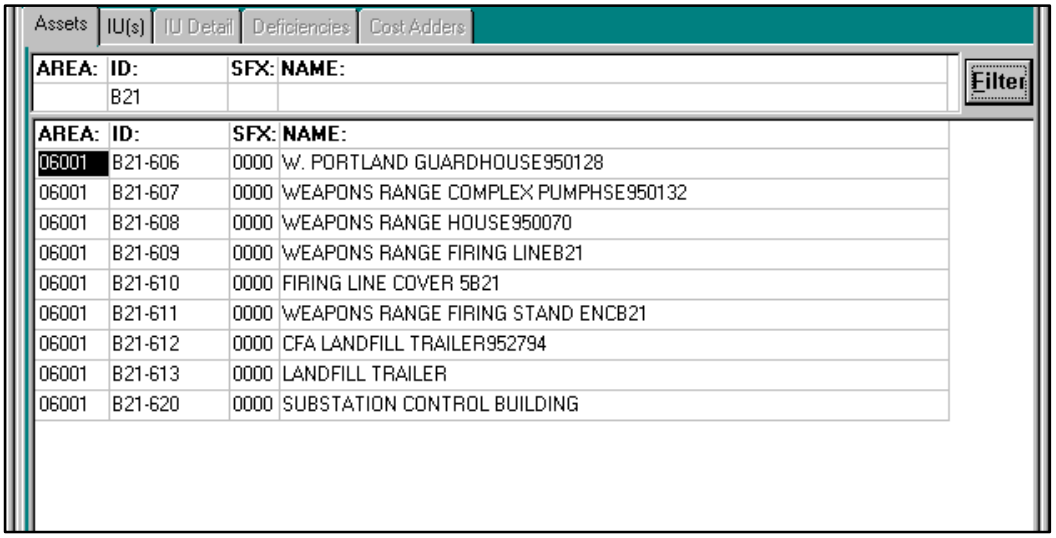


Figure 12 Asset Table after Filtering for ID B21

The Asset table can be sorted numerically and alphabetically simply by clicking on any of the column headers. For example, if you click on the Name column header, the table is reordered based on the assets' names. You could then click on the ID column header to reorder the table based on the ID numbers. The default order is based on the Area number.

7.3.2 The IU(s) Window

When you open the Inspection module, the **IU(s)** tab is inactive. Click on an Asset field to activate this tab. The Asset line you selected is highlighted, and the **IU(s)** tab's text turns dark gray as shown in Figure 13. Click on the **IU(s)** tab to open an **Inspection - IU(s)** window similar to the one shown in Figure 14. Note that the **IU Detail**, **Deficiencies**, and **Cost Adders** tabs activate after you highlight an IU.

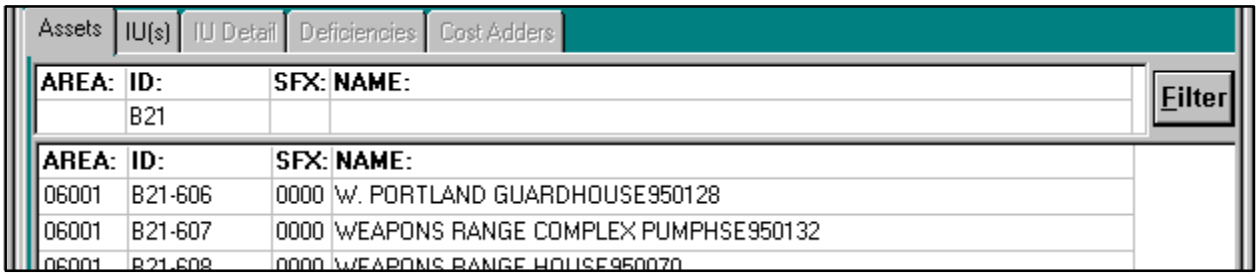


Figure 13 Active IU(s) Tab after Asset Selection

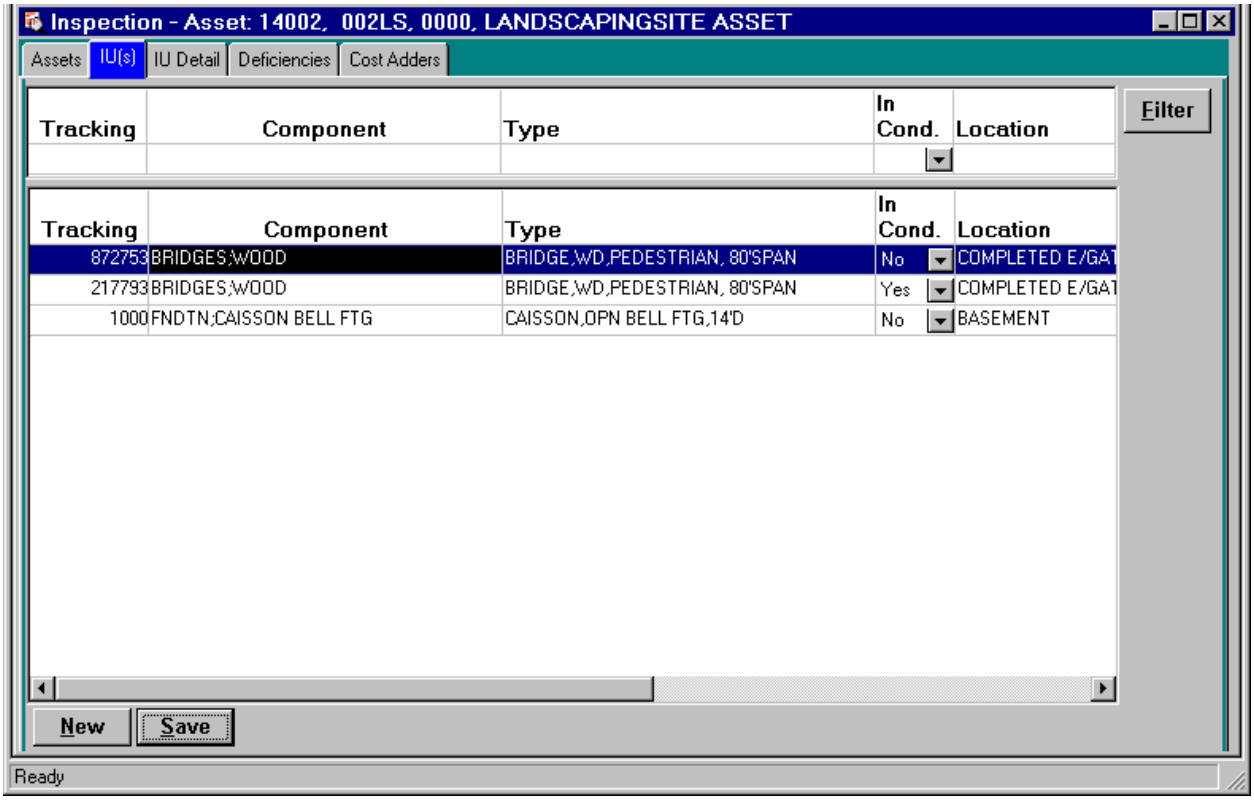


Figure 14 The Inspection - IU(s) Window

This window comprises five columns and the New, Save, and Filter buttons:

- Tracking: The IU tracking number.
- Component: The subsystems that make up the IU.
- Type: Information that usually specifies component material or construction detail.
- In Condition: Enables you to specify whether the IU is in condition. If you change this field, you must click on the **Save** button for the change to take effect.
- Location: Where the IU can be found.
- Filter Button: Use this button as described in Section 7.3.1. This tab's data can also be sorted as described in Section 7.3.1.
- New Button: Click on this to open a blank **Inspection - IU Details** window as described in the next section.
- Save Button: Click on this to save changes you made to the **In Condition** field.

7.3.3 The IU Detail and Deficiencies Windows

When you open the **IU(s)** tab, the **IU Detail** and **Deficiencies** tabs are inactive. Click on an IU field to activate these tabs. The IU line you selected is highlighted, and the **IU Detail** and **Deficiencies** tabs' text turns dark gray as shown in Figure 15. Click on the **IU Detail** tab to open an **Inspection - IU Detail** window similar to the one shown in Figure 16. Click on the **Deficiencies** tab to open an **Inspection - Deficiencies** window similar to the one shown in Figure 17.

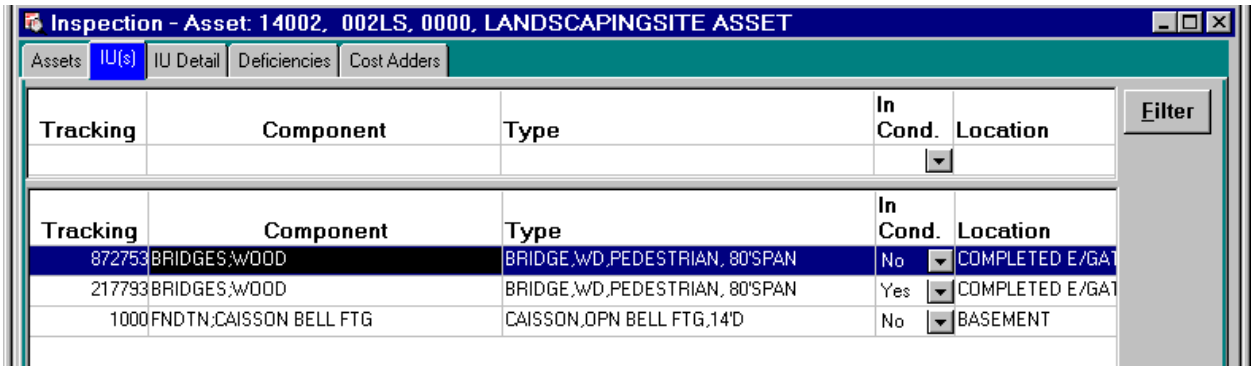


Figure 15 IU Detail and Deficiencies Tabs after IU Selection

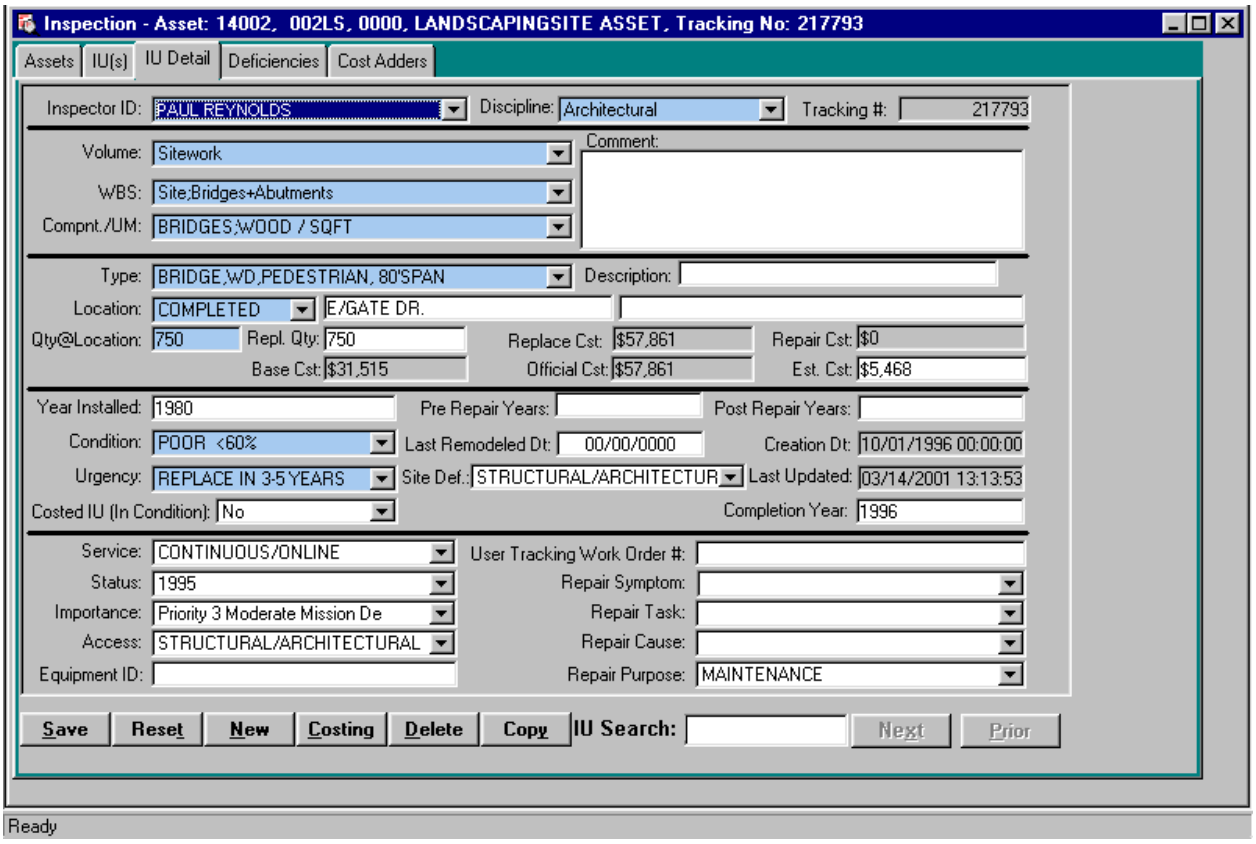


Figure 16 The Inspection - IU Detail Window

The following buttons appear at the bottom of the window:

- Save - Click on this to save your current data.
- Reset - Click on this to erase all data fields.
- New - Click on this to open a blank **IU Detail** window.
- Costing - Click on this to save your current data and run a costing report.
- Delete - Click on this to delete the current IU.
- Copy - Click on this to copy the current IU to use it as the basis for a new IU.
- IU Search - Enter an IU value in this field and then press the **Tab** key on your keyboard to open that IU's Detail window.
- Next - Click on this to open the next IU Detail window.
- Prior - Click on this to open the previous IU Detail window.

The data fields need to be completed to create a new Inspection Unit with associated deficiencies or if the data is edited. The following are definitions of the various data fields on the Inspection - IU Detail Window:

Inspection Field	Field Definition
Inspector ID	A picklist selection of the available inspectors. Selecting an inspector identifies who entered or performed the inspection
Discipline	A picklist selection defining the discipline of the inspector or type of inspection being performed.
Tracking #	A system generated unique number for the Inspection Unit identified. This unique number can be used to track the IU until it is corrected. This field is locked and cannot be edited.
Volume	A standard picklist select based on the twelve (12) building systems from R.S. Means. Selecting a volume filters the WBS selections.
WBS	A picklist selection, the Work Breakdown Structure is a define list of the major inspection areas.
Component/UM	A picklist selection based on the WBS selected. The component defines major systems or assemblies of the selected WBS.
Comment	A freeform field for entering a memo or descriptive information about the IU.
Type	A picklist selection based on the component selected. The Type and Component define the Inspection Unit or the item being inspected. The type also links to the cost tables.
Description	A free form data field for entering a description of the IU that better describes what the inspector is looking at.
Location	A three-part field for defining the location of the IU. The first field is a picklist selection of standard location identifiers. The next two fields can be used to refine the location.
Qty@Location	A numeric field for entering the quantity of the item identified.
Replacement Quantity	A numeric field for entering the quantity of the item identified that requires replacement.
Replacement Cost	This is a locked field that shows the cost to replace the IU.
Repair Cost	This is a locked field that shows the cost to repair the IU.
Base Cost	This is a locked field that shows the base cost to repair or replace the IU identified based on the information entered. Base costs do not include any cost adders.
Official Cost	This is a locked field that shows the official cost to repair or replace the IU identified based on the information entered.
Estimated Cost	This is a numeric field where the inspector can enter an estimated cost value for the repairs or replacements identified.
Year Installed	A data field for entering the date that the IU was first installed.
Pre Repair Years	The estimated years of life remaining for the identified IU before the repairs or replacements have been performed.

Inspection Field	Field Definition
Last Remodeled Date	A data field for entering the date that the IU was last remodeled.
Site Defined	A data field for identifying conditions specific to a site.
Post Repair Years	The estimated years of life remaining for the identified IU after the repairs or replacements have been performed.
Condition	A picklist selection to identify the general shape of the IU under inspection.
Creation Date	A system generated field that logs the date and time the IU is initially created.
Urgency	A picklist selection that defines when the repairs or replacement identified should be performed.
Last Updated	A system generated field that logs the date and time the inspection data for the selected IU is edited.
Costed IU (In Condition)	A flag that defaults to yes to include the IU into the costing and reporting modules. A change to No excludes the cost of the inspection items.
Completion Year	Defines the year that the identified work was actually performed.
Service	A picklist selection for defining the service requirements of the IU identified.
Status	A picklist selection for defining the status of the Repairs or Replacements identified.
Importance	A picklist selection for defining the importance of the IU identified to the operation of the asset.
Access	A picklist selection to define special access requirements for the IU identified.
Equipment ID	Defines the identification number of the IU under inspection.
User Tracking Work Order #	A unique number for the Inspection Unit identified. This unique number can be used to track the IU until it is corrected.
Repair Symptom	A picklist selection of common symptoms reported that identify repairs or replacements that might be required.
Repair Task	A picklist selection of standard tasks required to corrected deficiencies identified.
Repair Cause	A picklist selection that identifies probable causes for the deficiencies identified.
Repair Purpose	A picklist selection that identifies the main purpose for correcting the deficiencies found

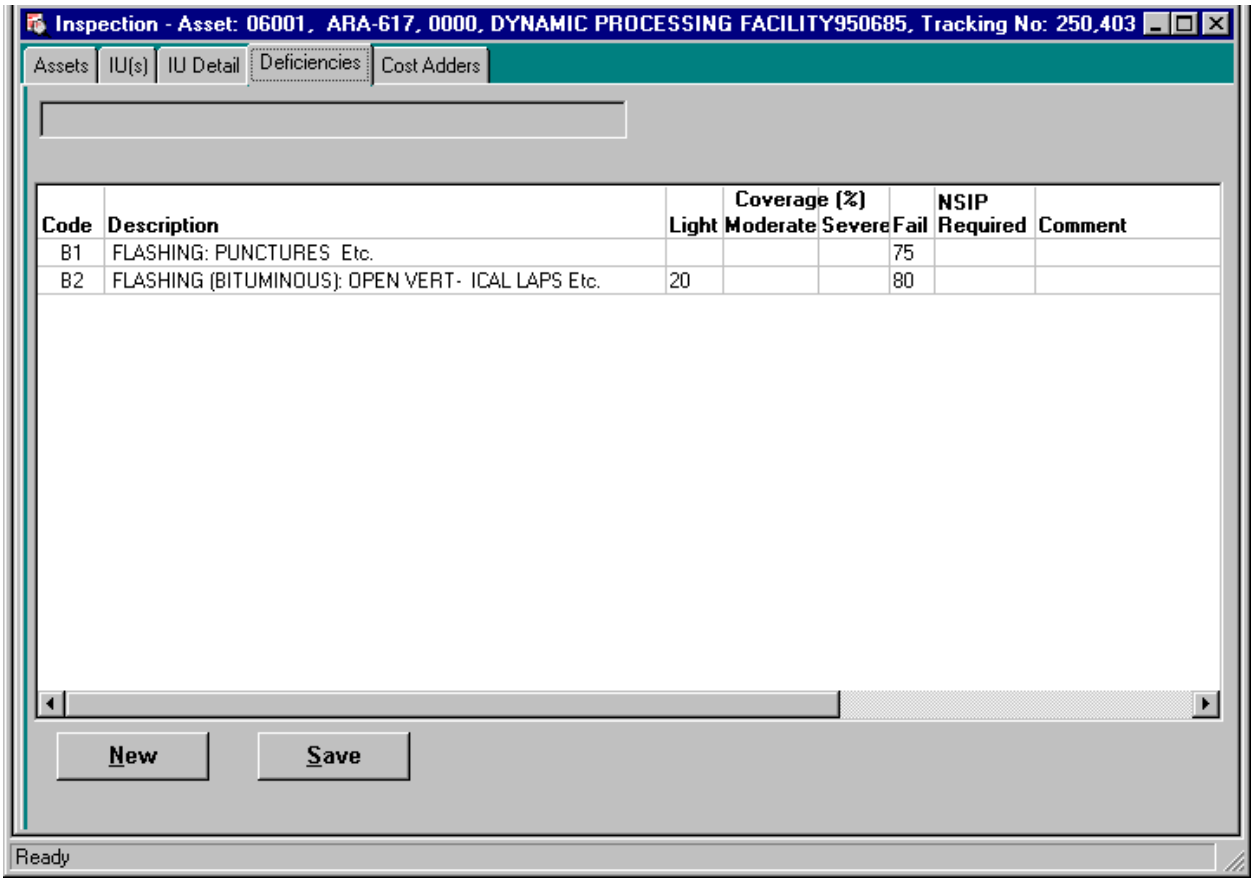


Figure 17 The Inspection - Deficiencies Window

Enter or update the appropriate data, and then click on the **Save** button Click on the **New** button to add a blank line. Enter new data. Click on the **Save** button.

The following data fields need to be completed to document deficiencies found. The following are definitions of the various data fields on the Deficiencies Window:

Inspection Field	Field Definition
Code	A picklist selection of the available deficiencies related to the IU selected. The code is a field for uniquely identifying the particular deficiencies for the IU selected.
Description	This is a field describing the deficiency selected.
Coverage %	Under the coverage field are four degrees of severity listed as Light, Moderate, Severe, and Fail. The Inspector indicates the percentage of coverage for the selected deficiency under the appropriate severity. There can be no more then 100% of one deficiency but multiple deficiencies are possible.

Inspection Field	Field Definition
NSIP Required	The Non-Standard Inspection Procedure Required field is a yes/no response. Yes indicates that additional testing is warranted.
Comment	This is a memo field for entering inspector comments concerning the selected deficiency.

7.3.4 The Cost Adders Window

Working in hazardous or dangerous environments necessitates the use of unique procedures and materials to protect repair personnel. These special conditions add cost to the repair process. The **Cost Adders** window enables you to identify the applicable conditions. Click on the **Cost Adders** tab to open an **Inspection - Cost Adders** window similar to the one shown in Figure 18.

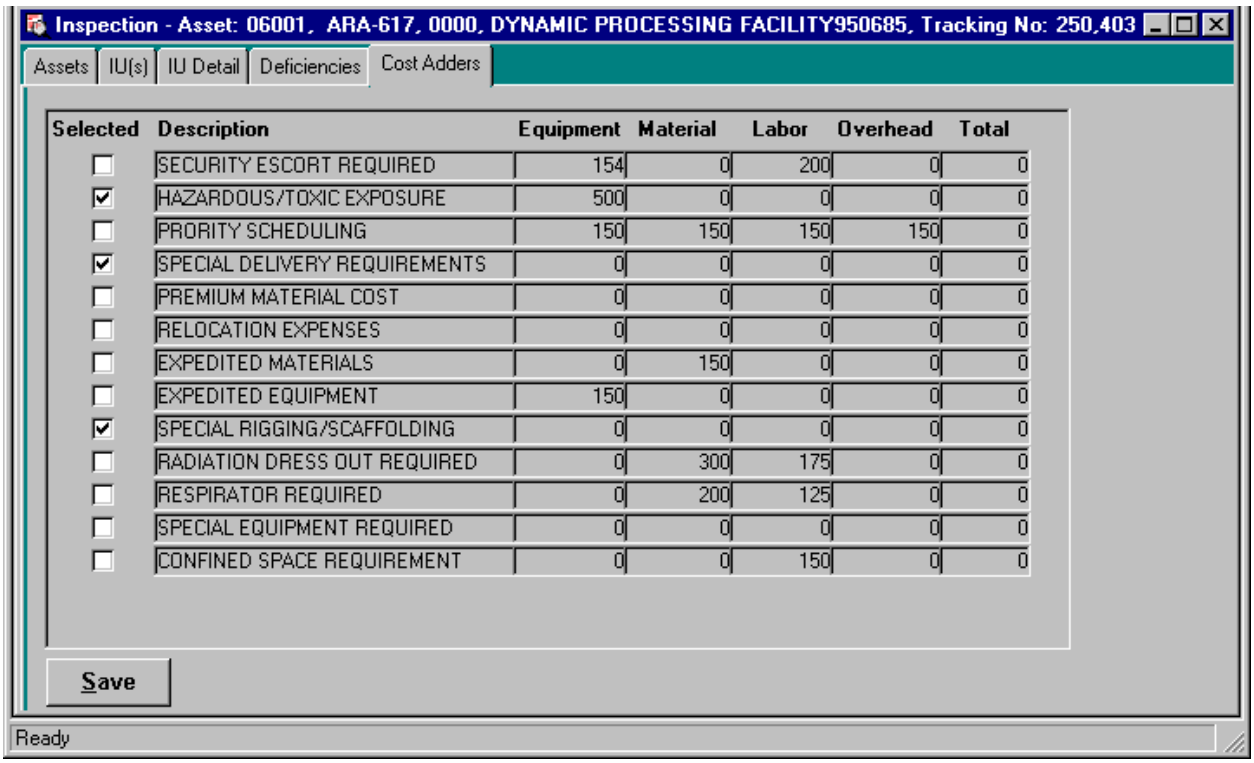


Figure 18 The Cost Adders Window

This window comprises seven columns and the Save button:

- Selected: Click on the box to select a cost adding condition. A check appears in the box. To deselect an item, click on the box to remove the check mark.
- Description: The special environment/condition.

- Equipment: The added equipment cost.
- Material: The added material cost.
- Labor: The added labor cost.
- Overhead: The added overhead cost.
- Total: The total added cost.
- Save Button: Click on this to save the current data.

Select the appropriate condition, and then click on the **Save** button.

7.4 The Reports Menu

The Reports module enables you to create and print reports. Select **Reports** on the menu bar to open the Reports function. The **Reporting Criteria** window shown in Figure 19 opens.

This window comprises six fields:

- Report: You can create the following reports -
  - Repair Costs
  - Site Asset Costs
  - Site Asset Costs by WBS
  - Total Repair Costs
  - Total Repair Costs - Historical Storage
  - Total Repair Costs by Area
  - Abbreviated Survey
  - Complete Survey
- Site/Area/Asset/WBS/IU: Select any combination of some or all of these fields depending on the level of detail desired.

Click on the arrow icon at the right of a field to open the selection list for that field. Select the appropriate datum. Click on **OK** to run the report. Click on **Cancel** to close the window. Examples of the reports are shown in Figure 20.

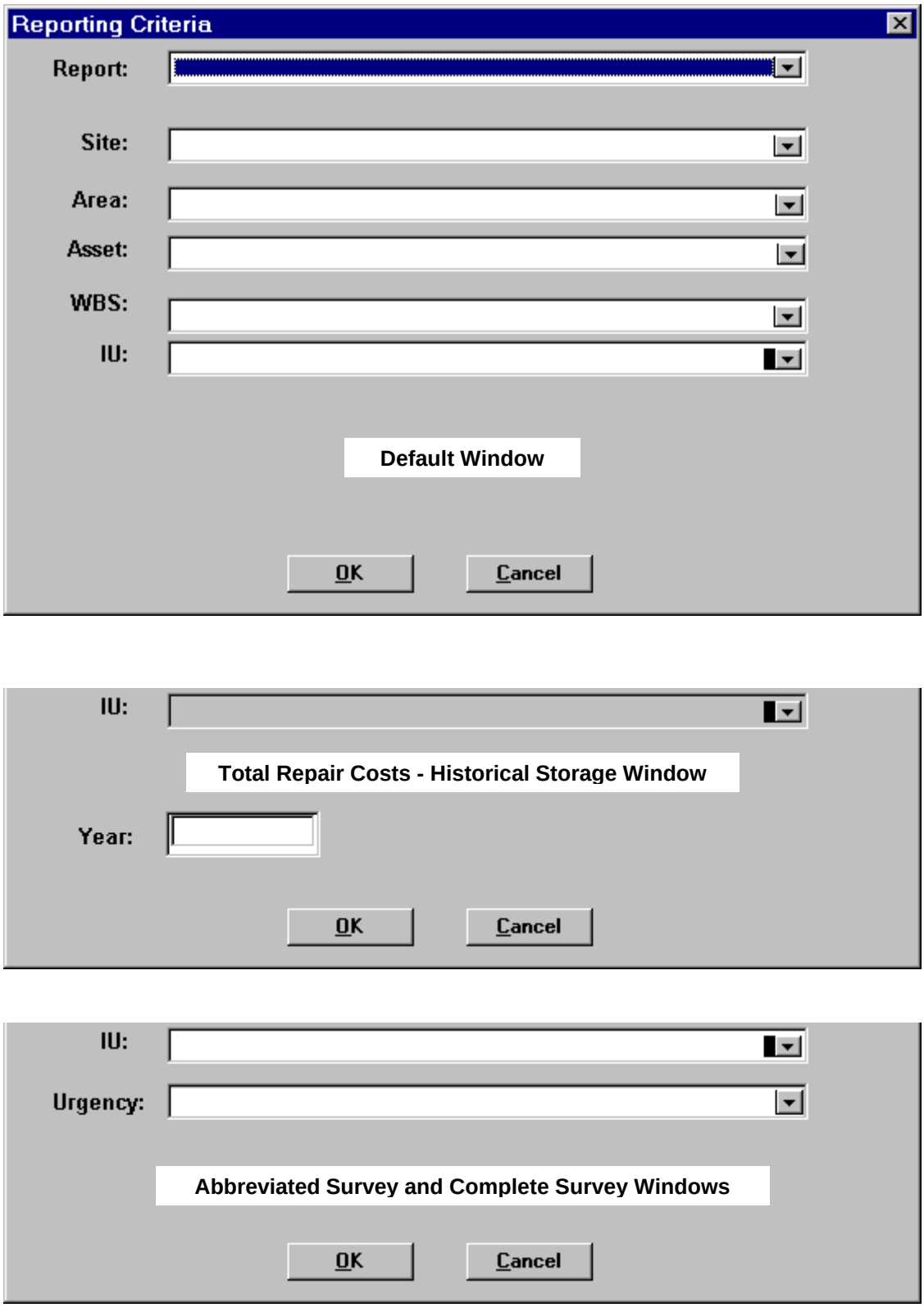


Figure 19 The Reporting Criteria Window

CONDITION ASSESSMENT INFORMATION SYSTEM

Page 1 of 1
03/15/2001

Repair Costs Report

LVRMOR LAWRENCE LIVERMORE
14002 0000 LLNL

Asset Info: 002LS 0000 LANDSCAPINGSITE ASSET

Tracking No: 217,793 **User Tracking / Work Order #:**
Inspector: PAUL REYNOLDS **Discipline:** Architectural
WBS: Site;Bridges+Abutments **Component:** BRIDGES;WOOD
Type: BRIDGE,WD,PEDESTRIAN, 80'SPAN **Location:** COMPLETED
Qty @Loc: 750 SQFT **Repl. Qty:** 750 **Est. Insp. Cost:** $5,468
Costed IU (In Cond): NO **Urgency:** REPLACE IN 3-5 YEARS
Condition: POOR <60% **Repair Cause:**
Creation Dt: 10/01/1996 12:00 AM **Official Cost:** $57,861

Repair Category	Equipment	Labor	Overhead	Material	Total
UNIT COST	2.18	6.20	7.04	26.60	42.02
Geographic Adjusters	0	42	0	12	
Area Adjusters	75	75	75	25	
IU Adjusters	25	35	25	10	
Inspector Total					5,468
REPAIR BASE	0	0	0	0	0

A - A Repair Costs Report

CONDITION ASSESSMENT INFORMATION SYSTEM

Page 1 of 1
10/20/2000

Site Asset Costs Report

Area	Asset ID	Asset Name	Base Cost	Geographic Adjustment Cost	Site Adj. Cost	Non-CAS Cost	Total Cost	Official Cost
06001	B16-610 0000	METEOROLOGICAL BALLOON SHELTER	$0.00	$0.00	$0.00	$0.00	$0.00	$500.00
			$0.00	$0.00	$0.00	$0.00	$0.00	$500.00

B - A Site Asset Costs Report

Figure 20 Sample CAIS Reports

CONDITION ASSESSMENT INFORMATION SYSTEM

Page 1 of 1

10/20/2000

Site Asset Costs by WBS

LVRMOR LAWRENCE LIVERMORE

Location: 14002 0000 002LS LANDSCAPINGSITE ASSET

Model Type: Auditorium - [Auditorium]

Use: Other

CAS WBS	Base Def. Cost	Deferred Maintenance
Foundation and Footings	$0	$0
Substructure	$0	$0
Superstructure	$0	$0
Exterior Closure	$0	$0
Roofing	$0	$0
Interior Finishes and Construction	$0	$0
Conveying Systems	$0	$0
Mechanical - Plumbing	$0	$0
Mechanical - Fire Protection	$0	$0
Mechanical - HVAC	$0	$0
Electrical Systems	$0	$0
Specialty Systems	$0	$0
Sitework	$31,515	$57,861

C - A Site Asset Costs by WBS Report

CONDITION ASSESSMENT INFORMATION SYSTEM

Page 1 of 1

10/20/2000

Total Repair Costs

LVRMOR LAWRENCE LIVERMORE

CAS WBS	Base Def. Cost	Maintenance
Foundation & Footings	$190,365	$251,769
Substructure	$7,467	$31,232
Superstructure	$26,948	$30,995
Exterior Closure	$388,749	$492,756
Roofing	$9,251,426	$10,728,855
Interior Finishes & Construction	$968,163	$1,235,030
Conveying Systems	$33,307	$45,407
Mechanical - Plumbing	$95,218	$165,328
Mechanical - Fire Protection	$1,794	$26,054
Mechanical - HVAC	$224,873	$963,680
Electrical Systems	$56,107	$4,236,462
Specialty Systems	$0	$4,300
Sitework	$190,352	$199,052
	$11,434,769	**$18,410,920**

D - A Total Repair Costs Report

Figure 20 Sample CAIS Reports (Cont)

CONDITION ASSESSMENT INFORMATION SYSTEM

Page 2 of
12/15/2

Asset Costs by WBS

LVRMOR LAWRENCE LIVERMORE

Location: 14002 0000 002LS LANDSCAPINGSITE ASSET

Model Type: Auditorium - [Auditorium]
Use: Other

CAS WBS	Base Def. Cost	Deferred Maintenance
Foundation & Footings	$0	$0
Substructure	$0	$4,000
Superstructure	$0	$0
Exterior Closure	$0	$0
Roofing	$863	$863
Interior Finishes & Construction	$0	$5,000
Conveying Systems	$0	$0
Mechanical - Plumbing	$51	$451
Mechanical - Fire Protection	$0	$0
Mechanical - HVAC	$0	$0

E - A Total Repair Costs - Historical Storage Report

CONDITION ASSESSMENT INFORMATION SYSTEM

Page 1
12/15/2

Total Repair Costs by Area

LVRMOR LAWRENCE LIVERMORE

CAS WBS	Base Def. Cost	Deferred Maintenance
Area: 06002 Idaho Falls Facilities		
Conveying Systems	$0	$0
Electrical Systems	$0	$2,903
Exterior Closure	$0	$0
Foundation & Footings	$0	$1,000
Interior Finishes & Construction	$0	$4,420
Mechanical - Fire Protection	$0	$0
Mechanical - HVAC	$0	$100
Mechanical - Plumbing	$0	$100
Roofing	$0	$0
Sitework	$0	$0
Specialty Systems	$0	$0
Substructure	$0	$0
Superstructure	$0	$0
Area Total:	**$0**	**$8,523**

F - A Total Repair Costs by Area Report

Figure 20 Sample CAIS Reports (Cont)

CONDITION ASSESSMENT INFORMATION SYSTEM

Page 1 of 1
03/15/2001

Abbreviated Survey Detail Report

LAWRENCE LIVERMORE
14002 0000 LLNL

Asset Info: 002LS 0000 LANDSCAPINGSITE ASSET

Tracking No: 217793 **User Tracking / Work Order #:**
Inspector: PAUL REYNOLDS
WBS: Site;Bridges+Abutments **Component:** BRIDGES;WOOD
Type: BRIDGE,WD,PEDESTRIAN, 80'SPAN **Description:** 57861
Location: COMPLETED **Qty @Loc:** 750 SQFT **Repl. Qty:** 750
Costed IU (In Cond): NO **Est. Insp. Cost:** $5,468 **Official Cost:** $57,861
Condition: POOR <60% **Urgency:** REPLACE IN 3-5 YEARS **Creation Dt:** 10/01/1996 12:0

*** End of Inspection Unit: 217793 ***

G - An Abbreviated CAIS Survey Report

CONDITION ASSESSMENT INFORMATION SYSTEM

Page 1 of 1
03/15/2001

Complete Survey Detail Report

LAWRENCE LIVERMORE
14002 0000 LLNL

Asset Info: 002LS 0000 LANDSCAPINGSITE ASSET

Tracking No: 217793 **User Tracking / Work Order #:**
Inspector: PAUL REYNOLDS **Discipline:** Architectural
WBS: Site;Bridges+Abutments **Component:** BRIDGES;WOOD
Type: BRIDGE,WD,PEDESTRIAN, 80'SPAN **Description:**
Location: COMPLETED **Qty @Loc:** 750 SQFT **Repl. Qty:** 750
Costed IU (In Cond): NO **Est. Insp. Cst:** $5,468 **Official Cost:** $57,861
Condition: POOR <60% **Urgency:** REPLACE IN 3-5 YEARS **Last Remodeled Dt:**
Creation Dt: 10/01/1996 12:00 AM **Repair Cause:**
Comment:

Deficiency Group	Deficiency	Coverage % Light	Moderate	Severe	Fail	NSIP Req.
	NO DEFICIENCIES					

*** End of Inspection Unit: 217793 ***

H - A Complete CAIS Survey Report

Figure 20 Sample CAIS Reports (Cont)

7.5 The Summary Condition Menu

The Summary Condition menu enables you to generate, print, and save Summary Condition reports. Select **Summary Condition** on the menu bar to open the function. The **Summary Condition** window shown in Figure 21 opens.

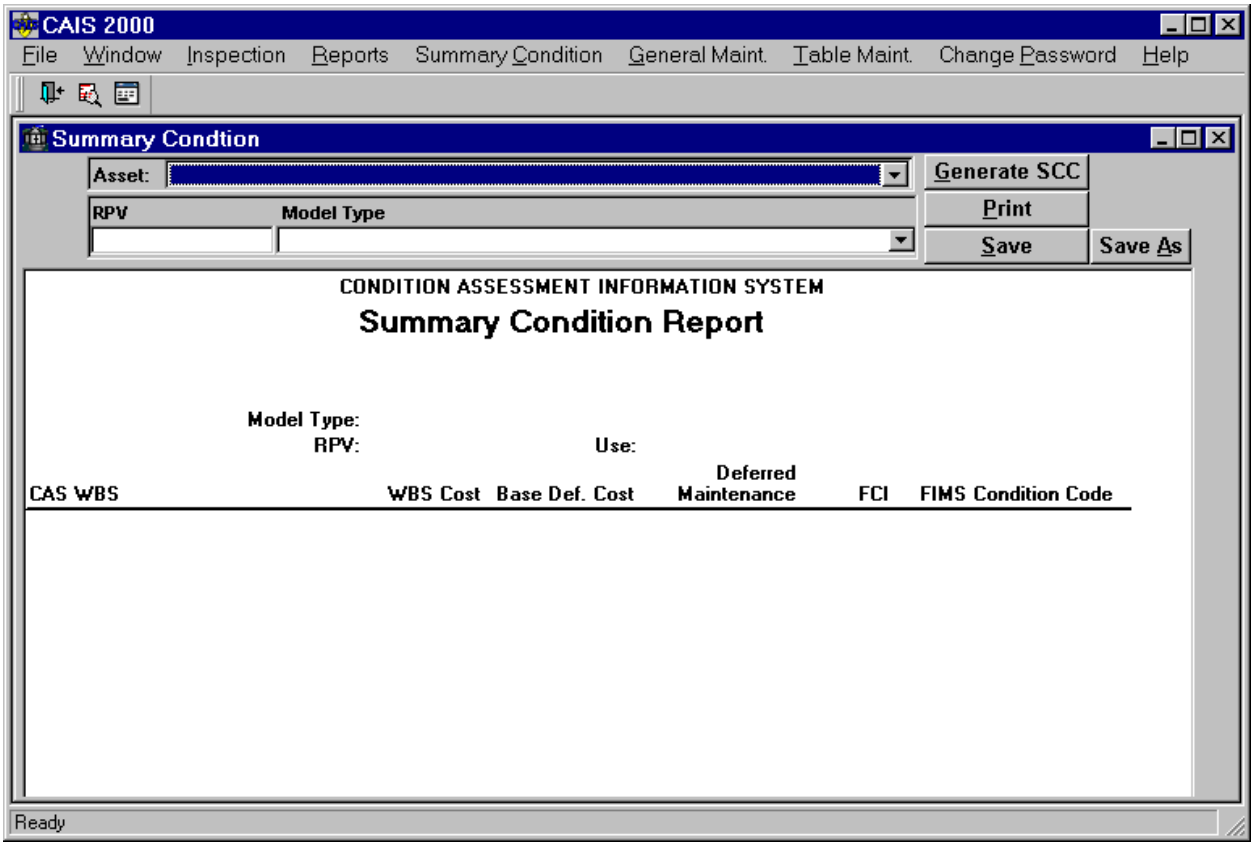


Figure 21 The Summary Condition Window

To create a report:

1. Click on the **Asset** field to open the Asset menu that lists the Assets in the system.
2. Select an Asset from the list and it will appear in the **Asset** field. The **RPV** (Replacement Plant Value) field is filled in automatically if it has been entered in the Asset Maintenance window. You can also manually enter a value.
3. Click on the **Model Type** field to open the Model Type menu.
4. Select a Model Type from the list that most closely represents the type of building you are looking at. It appears in the Model Type field.
5. Click on the **Generate SCC** button to run the report. Figure 22 shows a sample report.
6. Click on the **Print** button to print the report.
7. Click on the **Save** button to save the Model Type and RPV data.
8. Click on the **Save as** button to save the entire report in a different format (Excel, etc.).

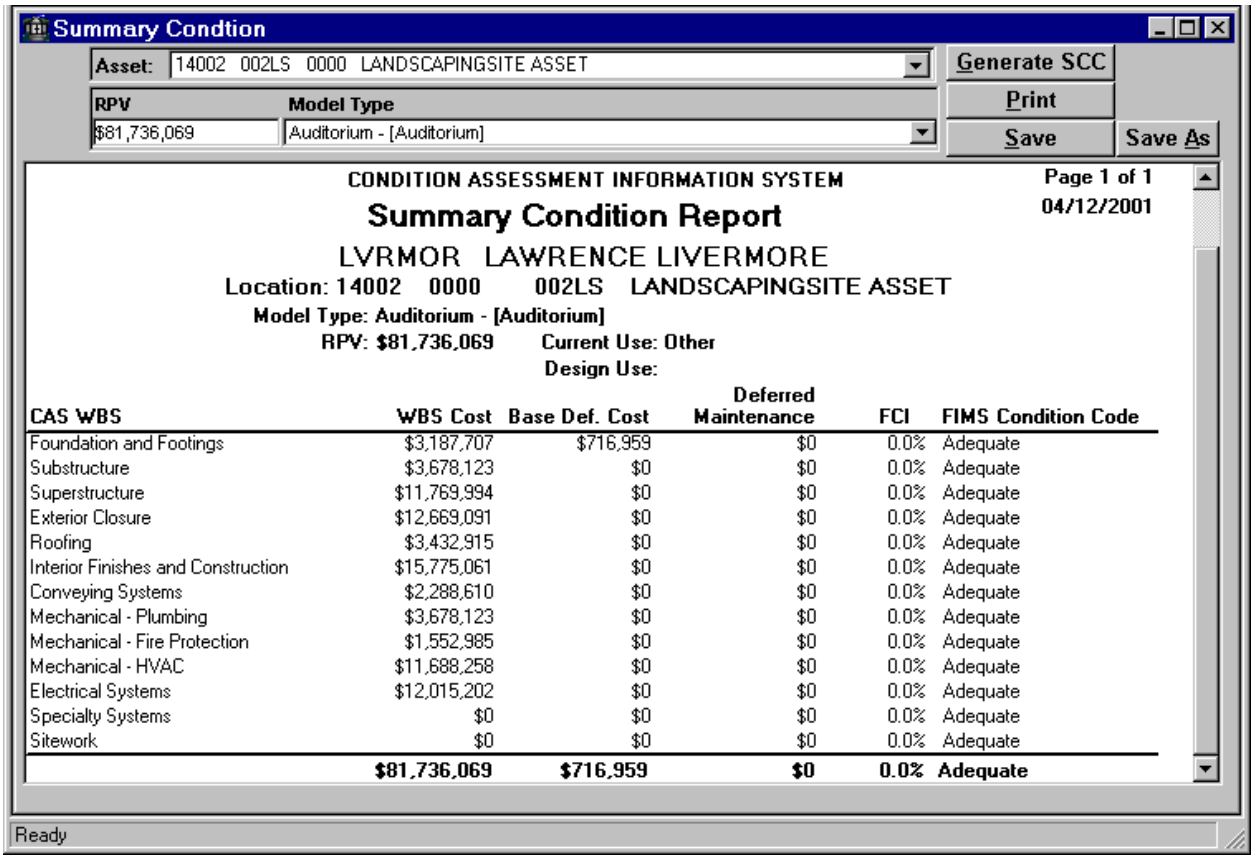


Figure 22 The Summary Condition Report

The report comprises the following columns:

- CAS WBS: The Work Breakdown Structure is the list of the CAS inspection areas.
- WBS Cost: The total cost of the WBS based on the percentage breakdowns for each WBS for the selected Model Type generated from the RPV.
- Base Deficiency Cost: The cost of the deficiencies found for each WBS excluding cost adders.
- Deferred Maintenance: The cost of the deficiencies found for each WBS plus any site factors.
- FCI: Facility Condition Index. The Deferred Maintenance Cost divided by the WBS Cost as a percentage.
- FIMS Condition Code: The status assigned to the FCI based on the percentage.
  - <10% - Adequate
  - 10-25% - Minor
  - 25-60% - Major
  - >60% - Replace

7.6 The General Maintenance Menu

The Maintenance module enables you to edit or add site asset data.

7.6.1 The Site Maintenance Window

The Site Maintenance function enables you to edit or add site information to the system database.

7.6.1.1 The Site Tab

Select **General Maintenance/Site Maintenance** on the menu bar to open the Site Maintenance function. A **Site Maintenance** window similar to the one shown in Figure 23 opens.

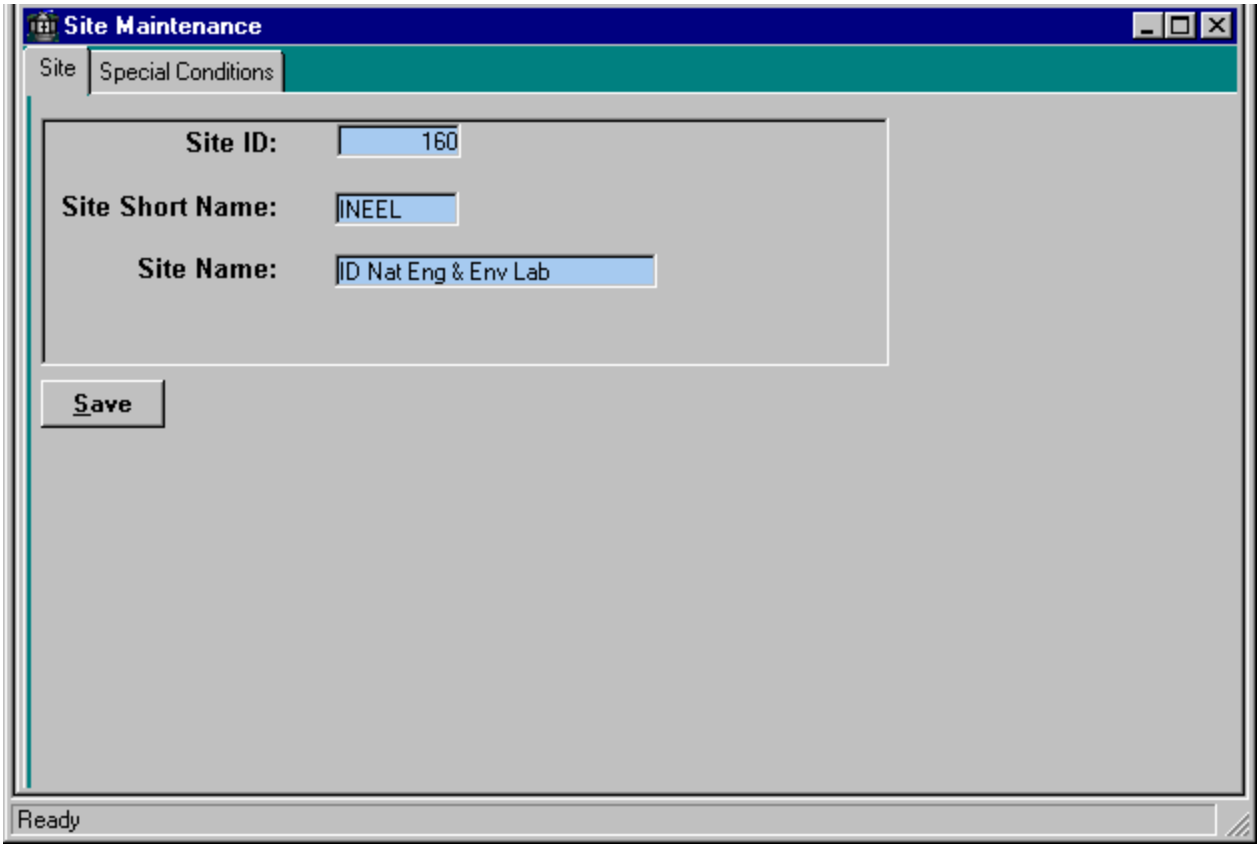


Figure 23 The Site Maintenance Site Window

This window comprises three data fields and the Save button:

- Site ID: The unique identification number for the site.
- Site Short Name: The abbreviation or acronym associated with the site name.

- Site Name: The full name of the site.
- Save Button: Click on this to save your current data.

7.6.1.2 The Special Conditions Tab

Working in hazardous or dangerous environments necessitates the use of unique procedures and materials to protect repair personnel. These special conditions add cost to the repair process. The **Special Conditions** window enables you to identify the applicable conditions. Click on the **Special Conditions** tab to open a **Special Conditions** window similar to the one shown in Figure 24.

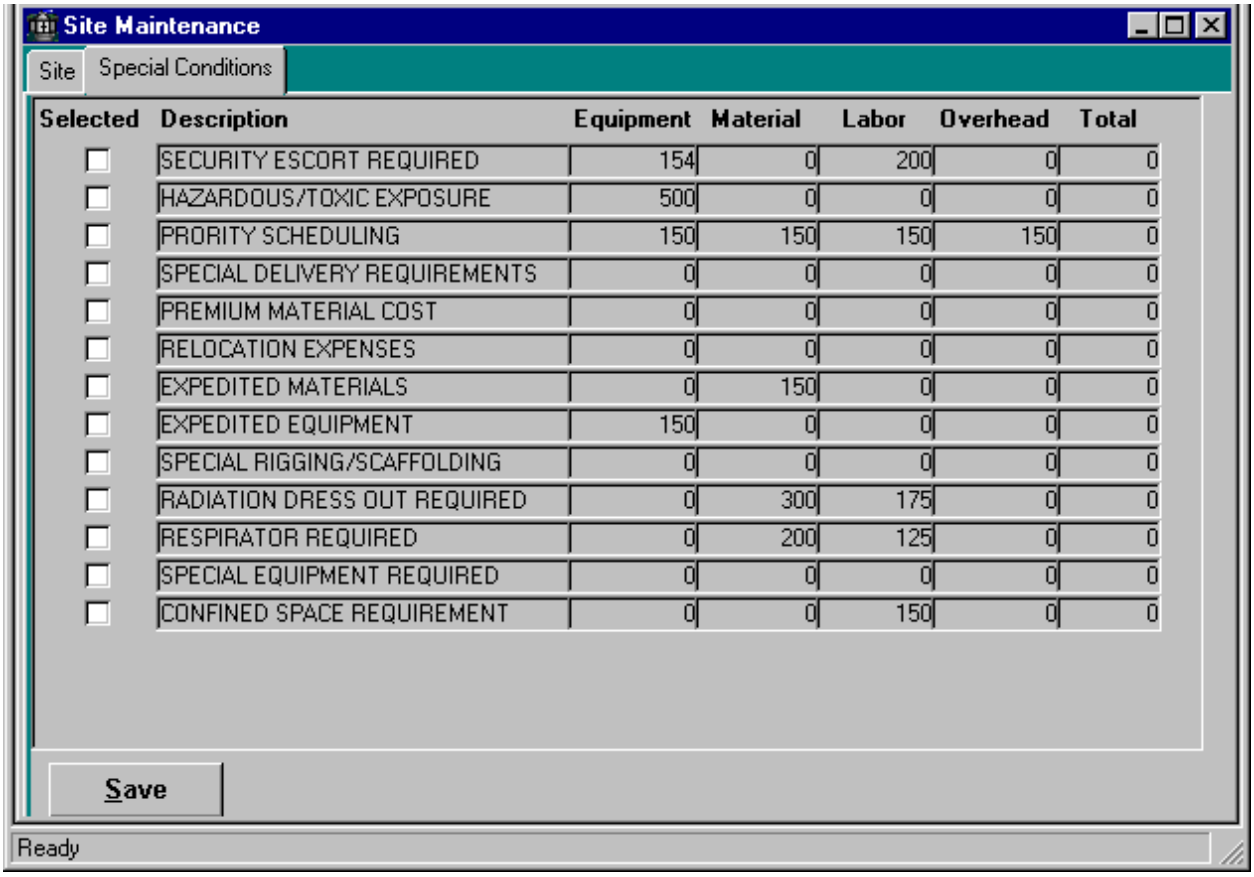


Figure 24 The Site Maintenance Special Conditions Window

This window comprises seven columns and the Save button:

- Selected: Click on the box to select a cost adding condition. A check appears in the box. To deselect an item, click on the box to remove the check mark.
- Description: The special environment/condition.

- Equipment: The added equipment cost.
- Material: The added material cost.
- Labor: The added labor cost.
- Overhead: The added overhead cost.
- Total: The total added cost.
- Save Button: Click on this to save the current data.

Select the appropriate condition, and then click on the **Save** button.

7.6.2 The Area Maintenance Window

The Area Maintenance function enables you to edit or add area information to the system database.

7.6.2.1 The Area Tab

Select **General Maintenance / Area Maintenance** on the menu bar to open the Area Maintenance function. An **Area Maintenance** window similar to the one shown in Figure 25 opens.

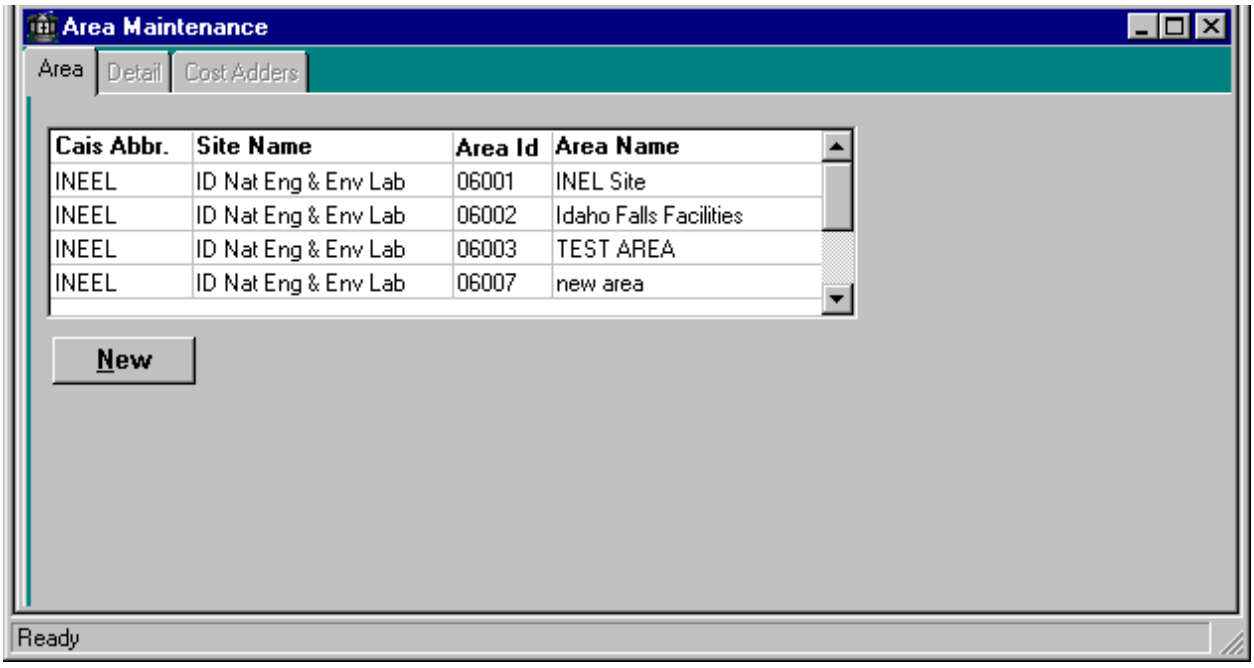


Figure 25 The Area Maintenance Area Window

This window comprises four columns and the New button:

- CAIS Abbreviation: The short name for the site.
- Site Name: The long name for the site.
- Area ID: The identification code for the area.
- Area Name: The area name.
- New Button: Click on this to open a blank **Detail** window, which is described in the following section.

7.6.2.2 The Detail Tab

When you open the **Area** window, the **Detail** and **Cost Adders** tabs are inactive. Click on an Area field to activate these tabs. The Area line you selected is highlighted, and the **Detail** and **Cost Adders** tabs' text turns dark gray. Click on the **Detail** tab to open a **Detail** window similar to the one shown in Figure 26.

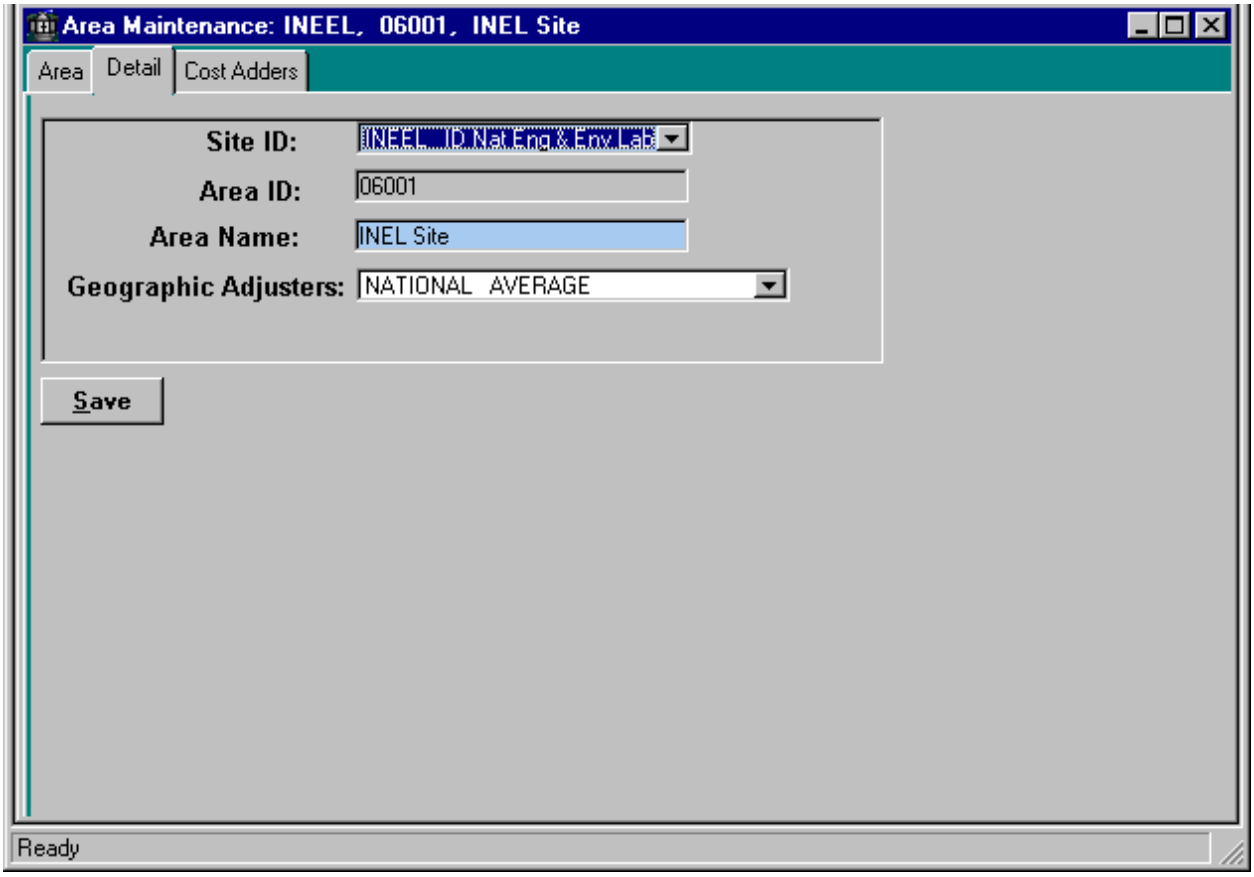


Figure 26 The Area Maintenance Detail Window

This window comprises four data fields and the Save button:

- Site Name: The long and short names for the site.
- Area ID: The identification code for the area.
- Area Name: The area name.
- Geographic Adjusters: Adjustments to the baseline cost based on the site location.
- Save Button: Click on this to save the current data.

7.6.3.3 The Cost Adders Tab

Working in hazardous or dangerous environments necessitates the use of unique procedures and materials to protect repair personnel. These special conditions add cost to the repair process. The **Cost Adders** window enables you to identify the applicable conditions. Click on the **Cost Adders** tab to open a **Cost Adders** window similar to the one shown in Figure 27.

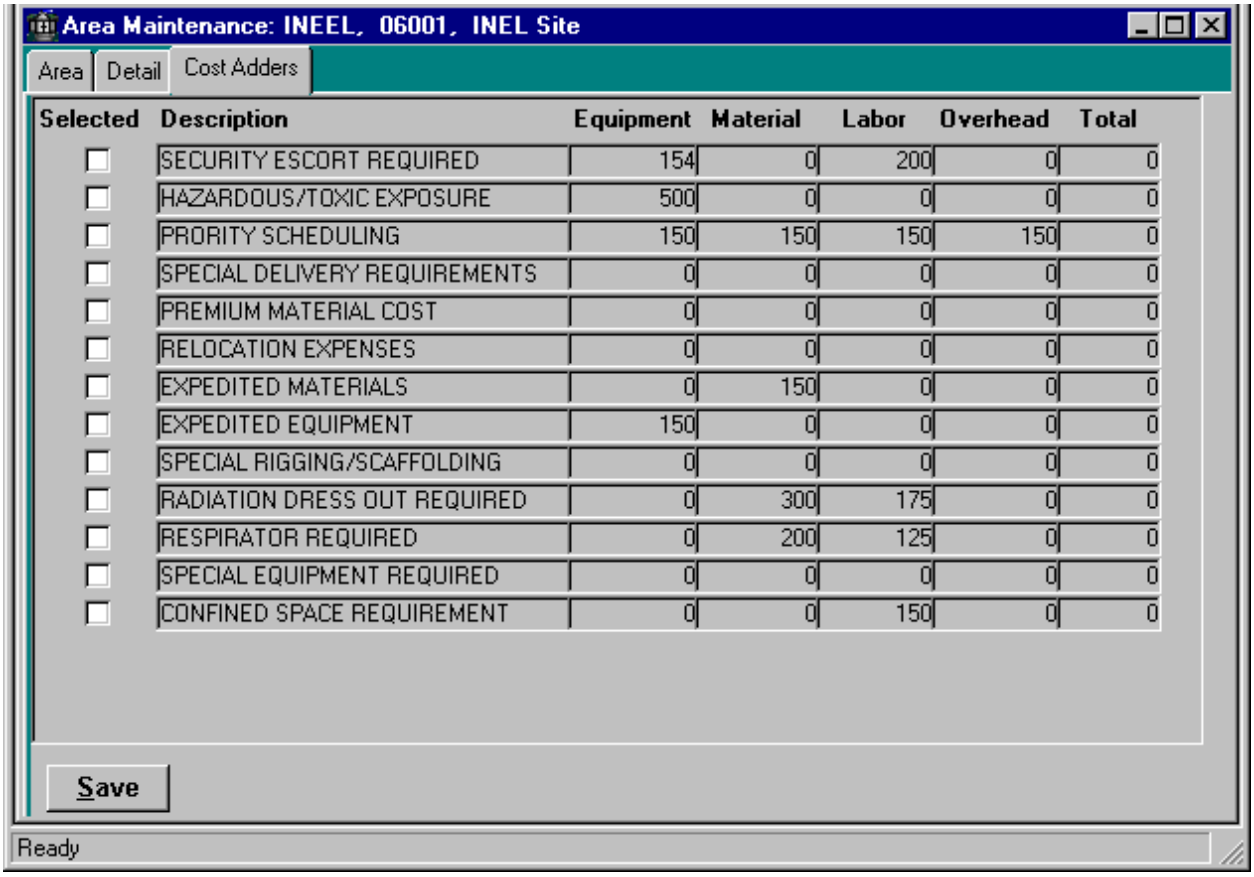


Figure 27 The Area Maintenance Cost Adders Window

This window comprises seven columns and the Save button:

- Selected: Click on the box to select a cost adding condition. A check appears in the box. To deselect an item, click on the box to remove the check mark.
- Description: The special environment/condition.
- Equipment: The added equipment cost.
- Material: The added material cost.
- Labor: The added labor cost.
- Overhead: The added overhead cost.
- Total: The total added cost.
- Save Button: Click on this to save the current data.

Select the appropriate condition, and then click on the **Save** button.

7.6.3 The Asset Maintenance Window

The Asset Maintenance function enables you to edit or add asset information to the system database.

7.6.3.1 The Assets Tab

Select **General Maintenance/Asset Maintenance** on the menu bar to open the Asset Maintenance function. An **Assets** window similar to the one shown in Figure 28 opens.

This window comprises four columns and the Filter and New buttons:

- Area: The numeric code for the asset location.
- ID: The identification code for the asset.
- SFX: The numeric suffix (if any) for the asset.
- Name: The asset name.
- New: Click on this to open a blank Detail window as described in the following section.
- Filter Button: Use this button to filter out unneeded data. Enter the desired parameter on the blank line to the left of the button, and then click the button. The table will now display only the data that contain the parameter you entered.

  For example, using the data from Figure 28, you want to see only assets containing "ARA" in their ID. Type ARA in the ID field as shown in Figure 29. Then click on the Filter button. Figure 30 shows the result. Note that all IDs contain ARA.

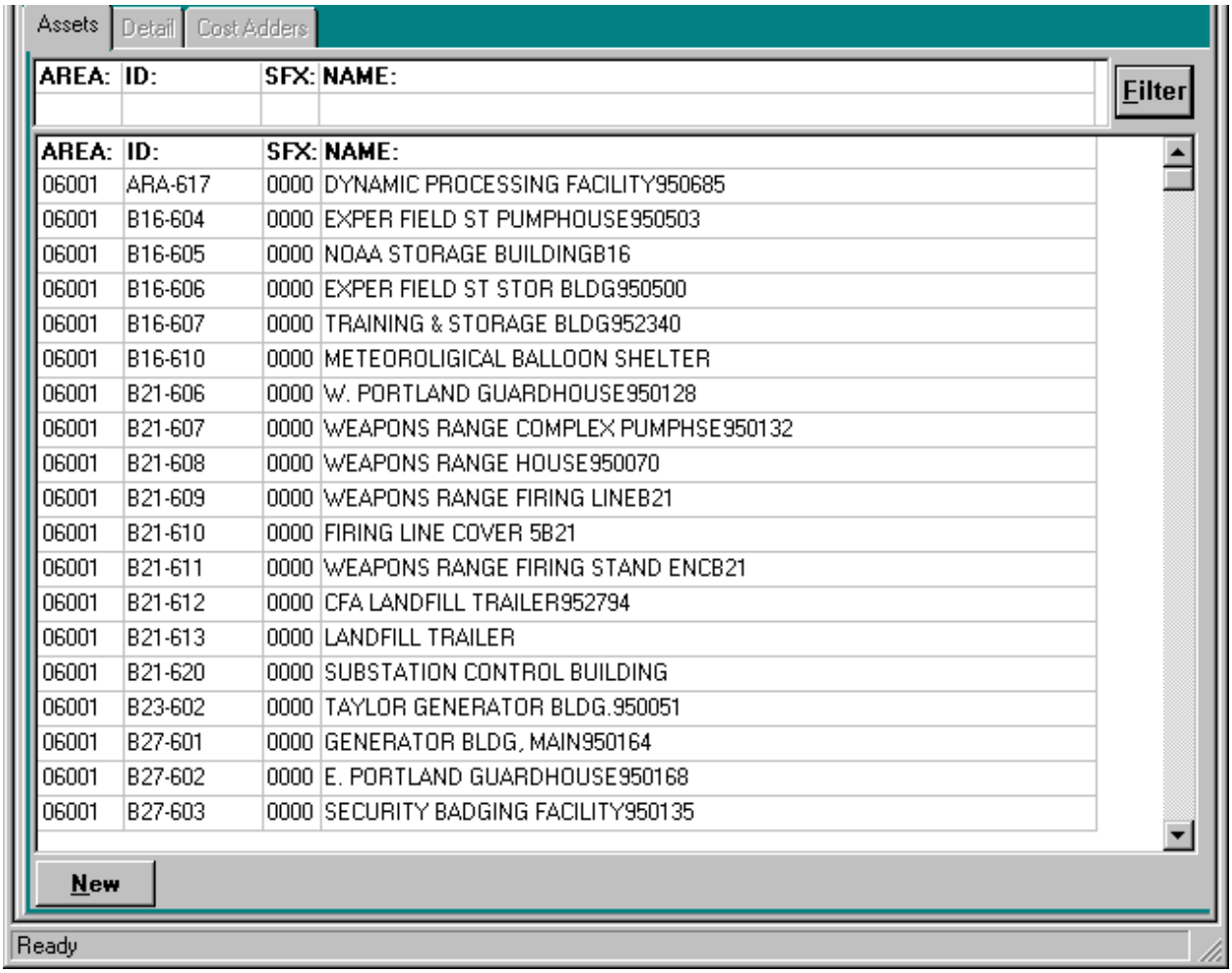


Figure 28 The Asset Maintenance Assets Window

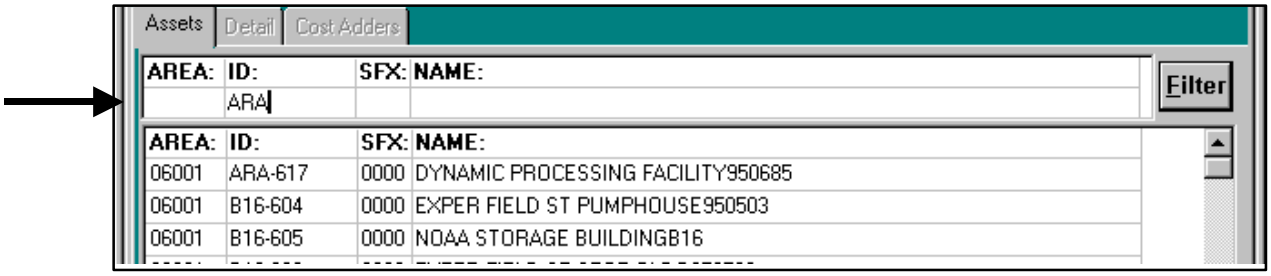


Figure 29 Filtering for ID ARA

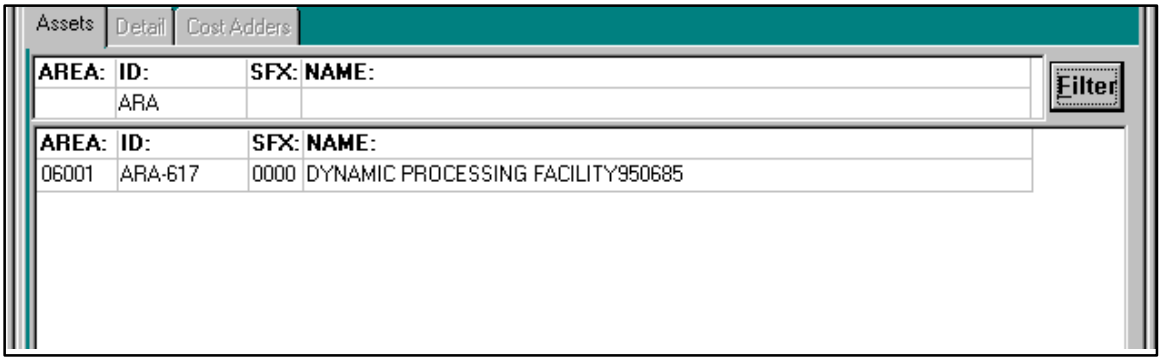


Figure 30 Asset Window after Filtering for ID ARA

The Asset window can be sorted numerically and alphabetically simply by clicking on any of the column headers. For example, if you click on the Name column header, the table is reordered based on the assets' names. You could then click on the ID column header to reorder the table based on the ID numbers. The default order is based on the Area number.

7.6.3.2 The Detail Tab

When you open the **Assets** window, the **Detail** and **Cost Adders** tabs are inactive. Click on an Asset field to activate these tabs. The Asset line you selected is highlighted, and the **Detail** and **Cost Adders** tabs' text turns dark gray as shown in Figure 31. Click on the **Detail** tab to open a **Detail** window similar to the one shown in Figure 32.

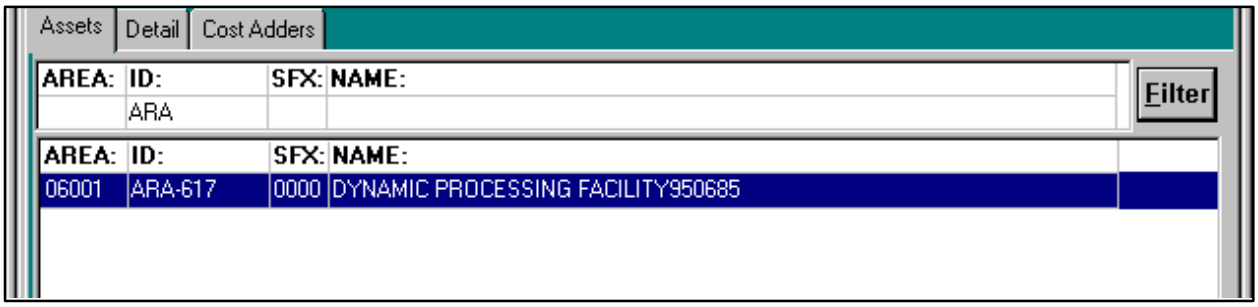


Figure 31 The Detail Tab after Asset Selection

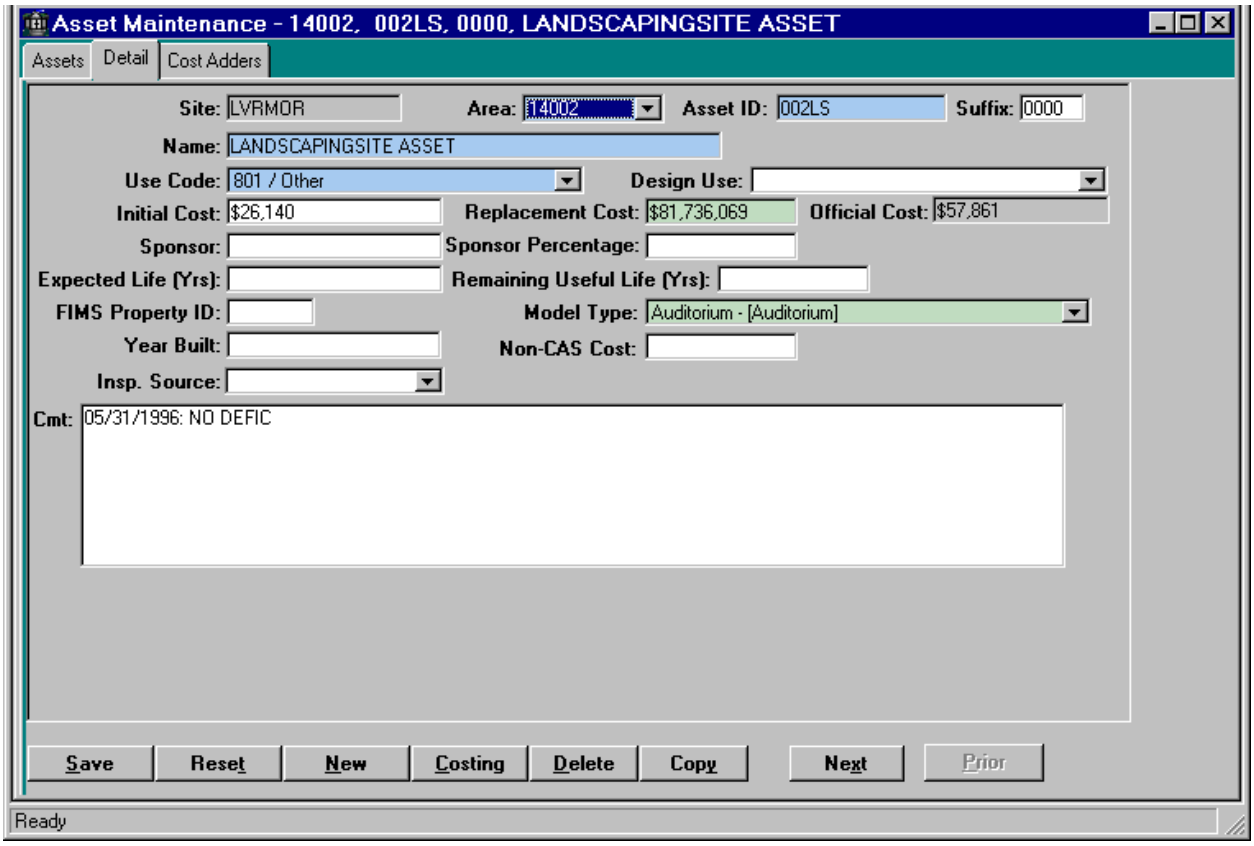


Figure 32 The Asset Maintenance Detail Window

The following buttons appear at the bottom of the window:

- Save - Click on this to save your current data.
- Reset - Click on this to erase all data fields.
- New - Click on this to open a blank Asset Maintenance Detail window.
- Costing - Click on this to save your current data and run a costing report.
- Delete - Click on this to delete the current Asset.
- Copy - Click on this to copy the current Asset to use it as the basis for a new Asset.
- Next - Click on this to open the next Assets Maintenance Detail window.
- Prior - Click on this to open the previous Assets Maintenance Detail window.

The following data fields need to be completed to create a new asset or if the data is edited. The following are definitions of the various data fields on the Asset Maintenance Detail Window:

Inspection Field	Field Definition
Site	This is a locked field that designates the Site where the asset is located.
Area	A picklist selection defining the Area of the Site where the asset is located. This can be any smaller designation of a Site as defined by the CAIS Administrator.
Asset ID	A field for designating a unique identification number for an Asset and is alphanumeric. This Asset ID is usually the FIMS ID number for the Asset but can be defined by the CAIS Administrator.
Suffix	A field for designating portions or areas of an Asset. The default designation for this field is "0000" for no Asset splits.
Name	A field for entering the name of the Asset created.
Use Code	A picklist selection of the current primary mission or use of the Asset.
Design Use	A picklist selection designating the original mission or use of the Asset.
Initial Cost	A field for entering the original cost of the Asset in dollars.
Replacement Cost	A field for entering the replacement cost of the Asset in current dollars.
Official Cost	A system generated field that totals the official repair and replacement costs for the deficiencies found during inspections of the Asset.
Sponsor	A field for entering the primary owner or landlord responsible for the Asset.
Sponsor Percentage	The percentage of the Asset up to 100% that designates the Sponsor's responsibility.
Expected Life (Years)	The expected design life of the Asset in years.
Remaining Useful Life (Years)	The estimated remaining design life of the Asset in years.
FIMS Property ID	The unique identification for the Asset as designated in the DOE Facilities Information Management System.
Model Type	A picklist of standard model types based on the construction type and use of the Asset. Selection of a model type is required to generate the summary condition for the major building systems or WBS categories.
Year Built	A field for entering the calendar year when the Asset was originally constructed.
Inspection Source	A picklist selection to identify the source of the inspection data such as a CAS inspection for the current year.
Non-CAS Cost	A field for entering any additional costs associated with repairs and replacements required for the Asset in dollars. An example is contingency funds or engineering costs.
Comment	A memo field for entering additional information important to document concerning the Asset.

7.6.3.3 The Cost Adders Tab

Working in hazardous or dangerous environments necessitates the use of unique procedures and materials to protect repair personnel. These special conditions add cost to the repair process. The **Cost Adders** window enables you to identify the applicable conditions. Click on the **Cost Adders** tab to open a **Cost Adders** window similar to the one shown in Figure 33.

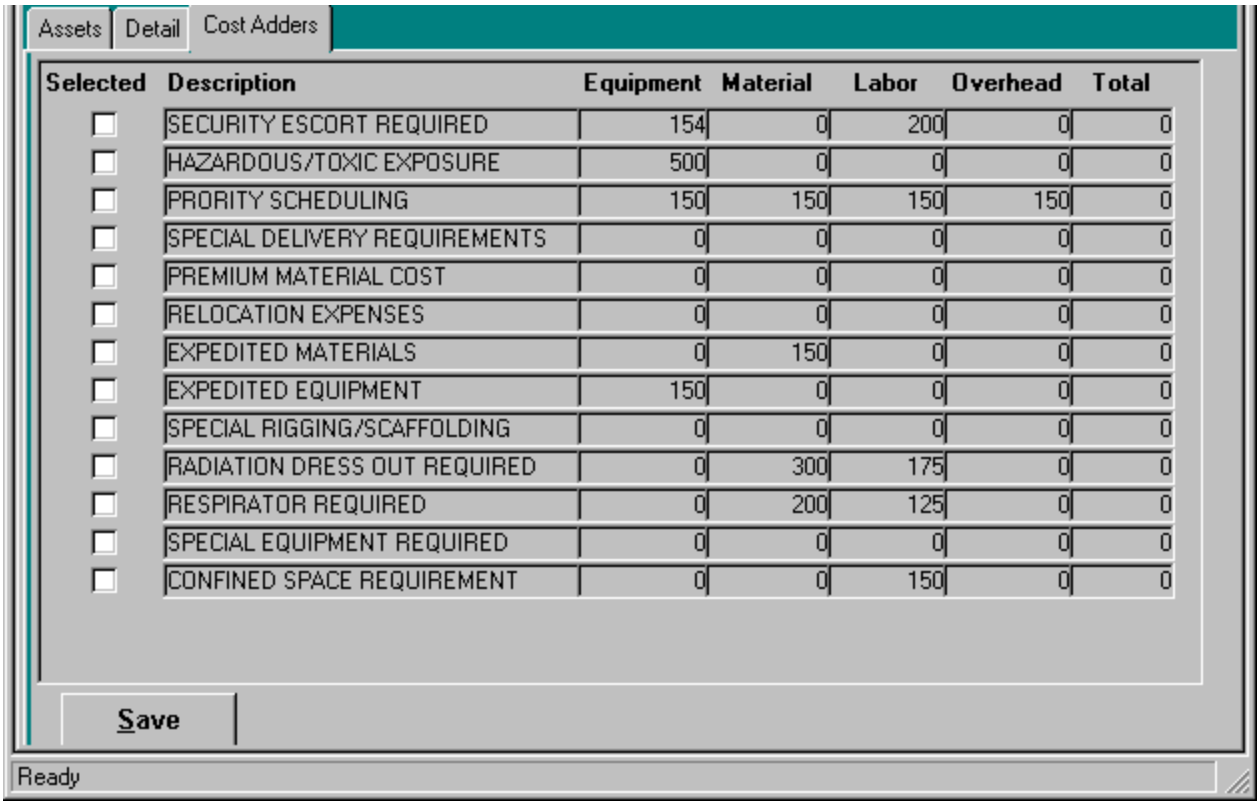


Figure 33 The Asset Maintenance Cost Adders Window

This window comprises seven columns and the Save button:

- Selected: Click on the box to select a cost adding condition. A check appears in the box. To deselect an item, click on the box to remove the check mark.
- Description: The special environment/condition.
- Equipment: The added equipment cost.
- Material: The added material cost.
- Labor: The added labor cost.
- Overhead: The added overhead cost.

- Total: The total added cost.
- Save Button: Click on this to save the current data.

Select the appropriate condition, and then click on the **Save** button.

7.7 The Table Maintenance Menu

The Table Maintenance function enables you to create or change a number of inspection parameters within the system database. To view the Table Maintenance menu shown in Figure 34, select **Table Maint** on the menu bar.

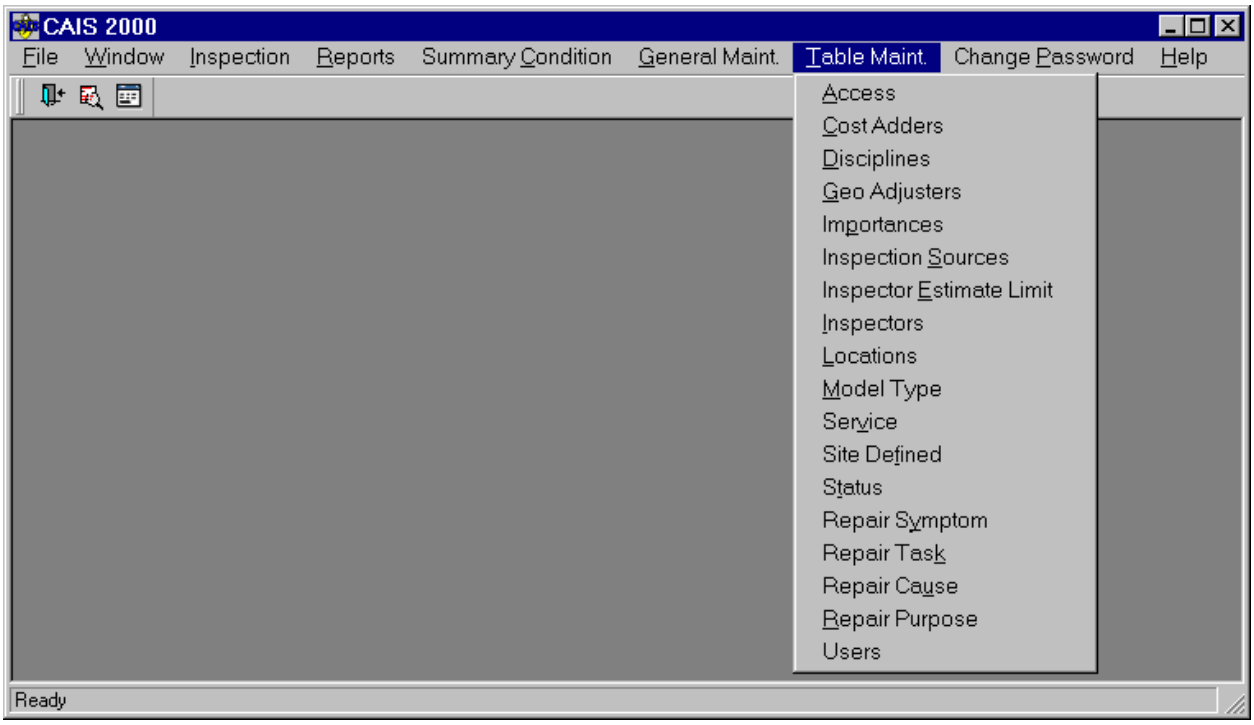


Figure 34 The Table Maintenance Menu

The following sections describe the parameters listed in the menu.

7.7.1 Access

Select **Table Maint/Access** to open the **Access Maintenance** window shown in Figure 35. This lists the various CAIS access codes and their properties.

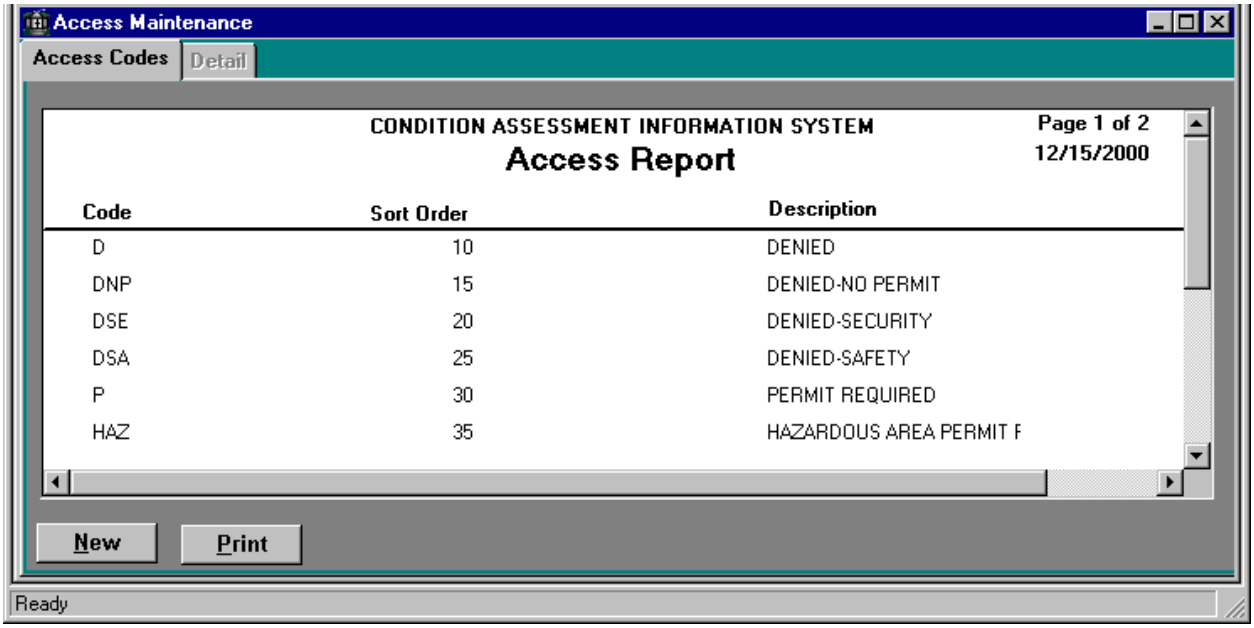


Figure 35 The Access Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Access Detail** window similar to that shown in Figure 36. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Access Detail** window shown in Figure 36.

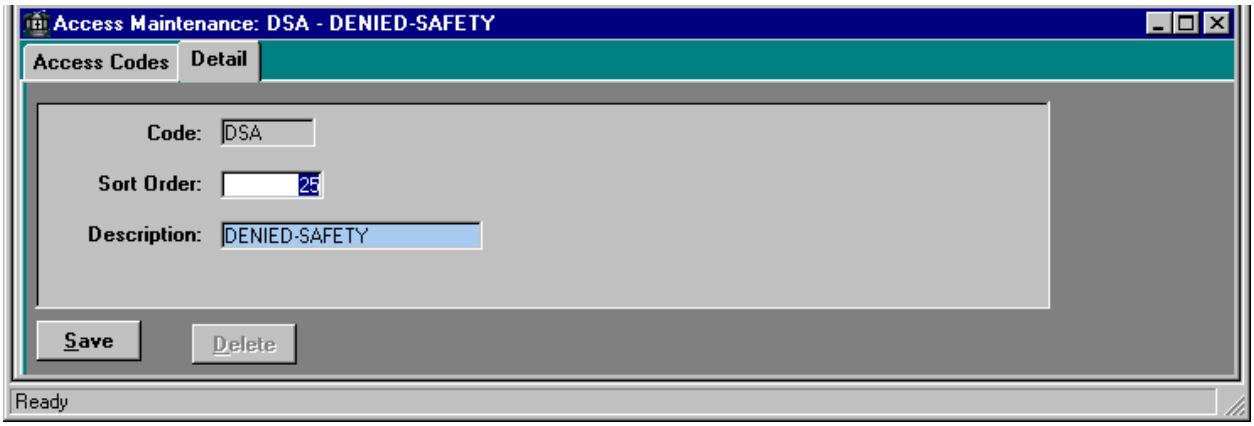


Figure 36 The Access Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.2 Cost Adders

Select **Table Maint/Cost Adders** to open the **Cost Adders Maintenance** window shown in Figure 37. This lists the various codes and associated properties for special conditions and materials that affect the costing baseline.

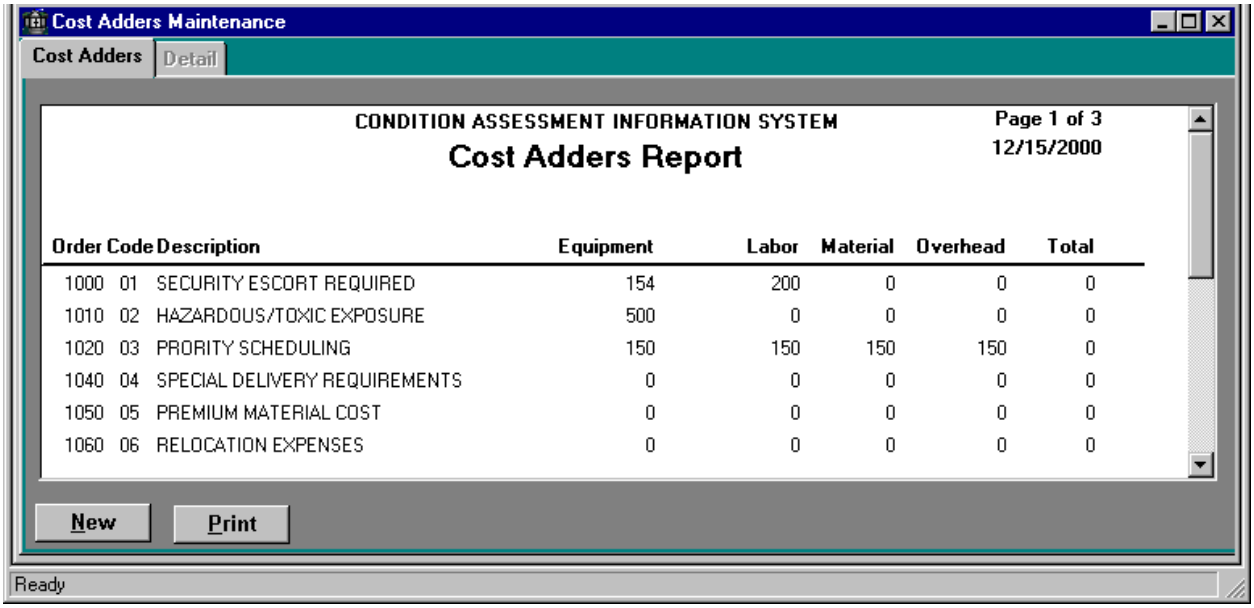


Figure 37 The Cost Adders Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Cost Adders Detail** window similar to that shown in Figure 38. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Cost Adders Detail** window shown in Figure 38.

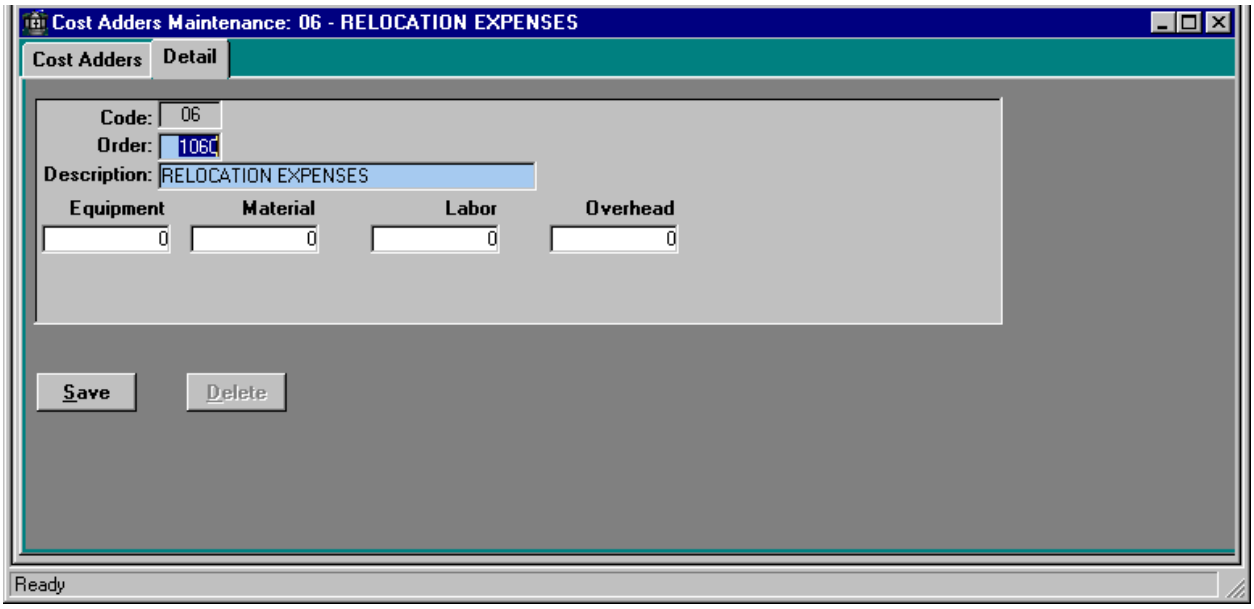


Figure 38 The Cost Adders Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.3 Disciplines

Select **Table Maint/Disciplines** to open the **Discipline Maintenance** window shown in Figure 39. This lists the various codes and descriptions for problem classification.

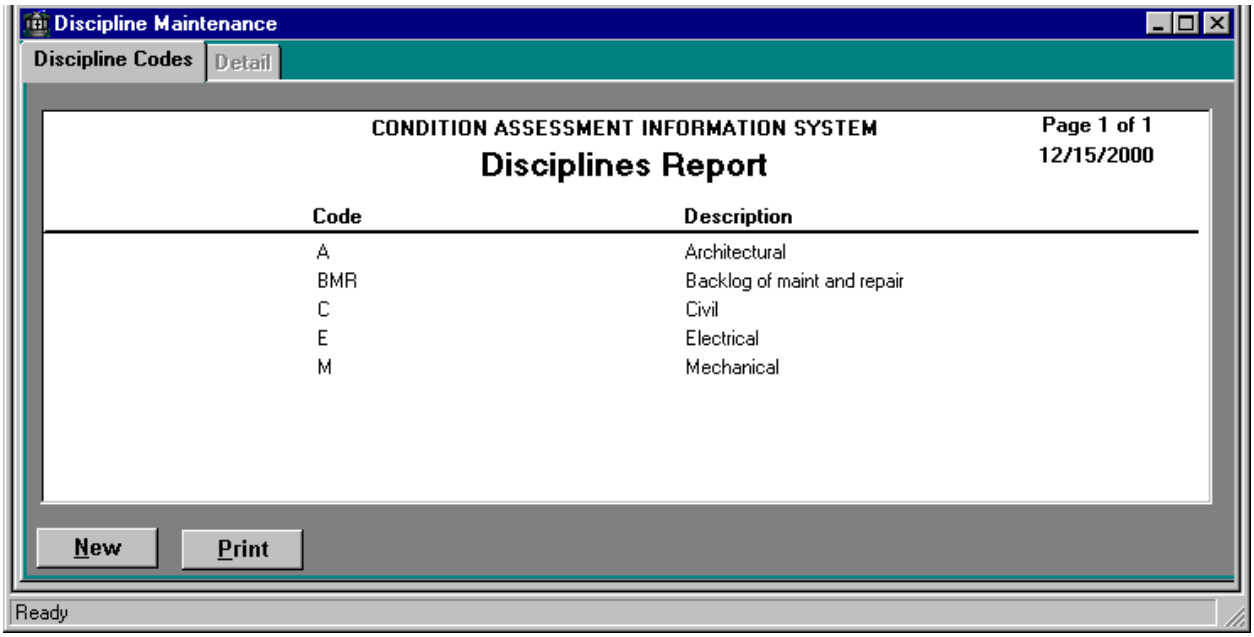


Figure 39 The Discipline Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Discipline Detail** window similar to that shown in Figure 40. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Discipline Detail** window shown in Figure 40.

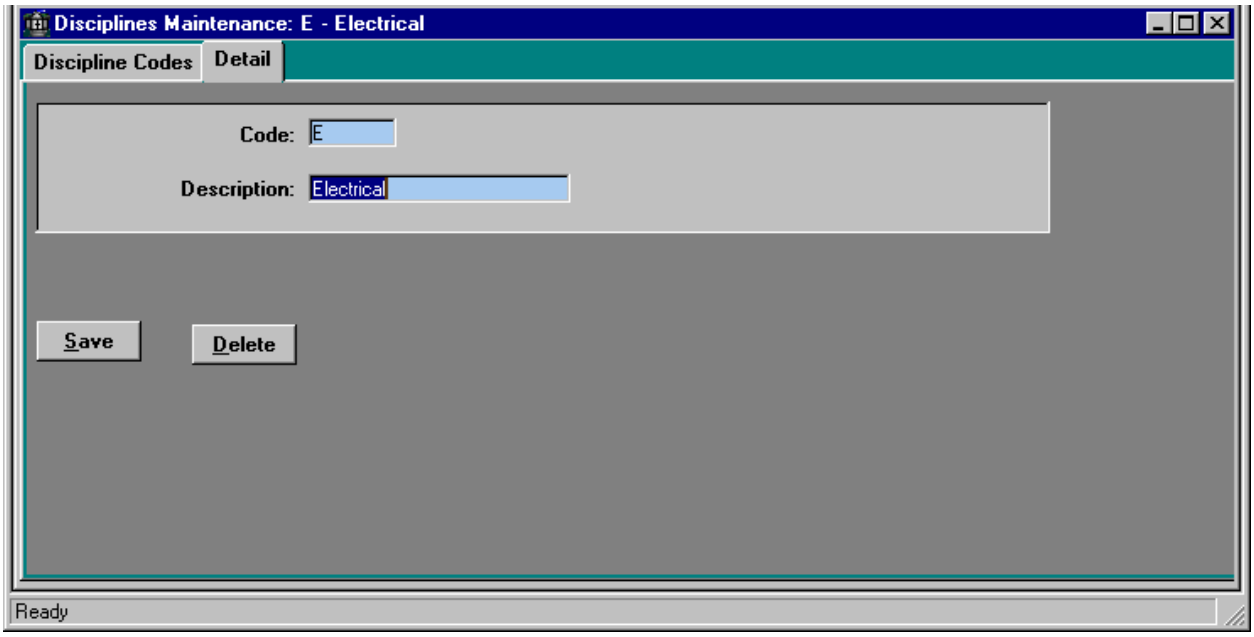


Figure 40 The Discipline Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.4 Geographic Adjusters

Select **Table Maint/Geo Adjusters** to open the **Geographic Adjusters Maintenance** window shown in Figure 41. This lists the various adjustment factors for the base inspection and repair costing.

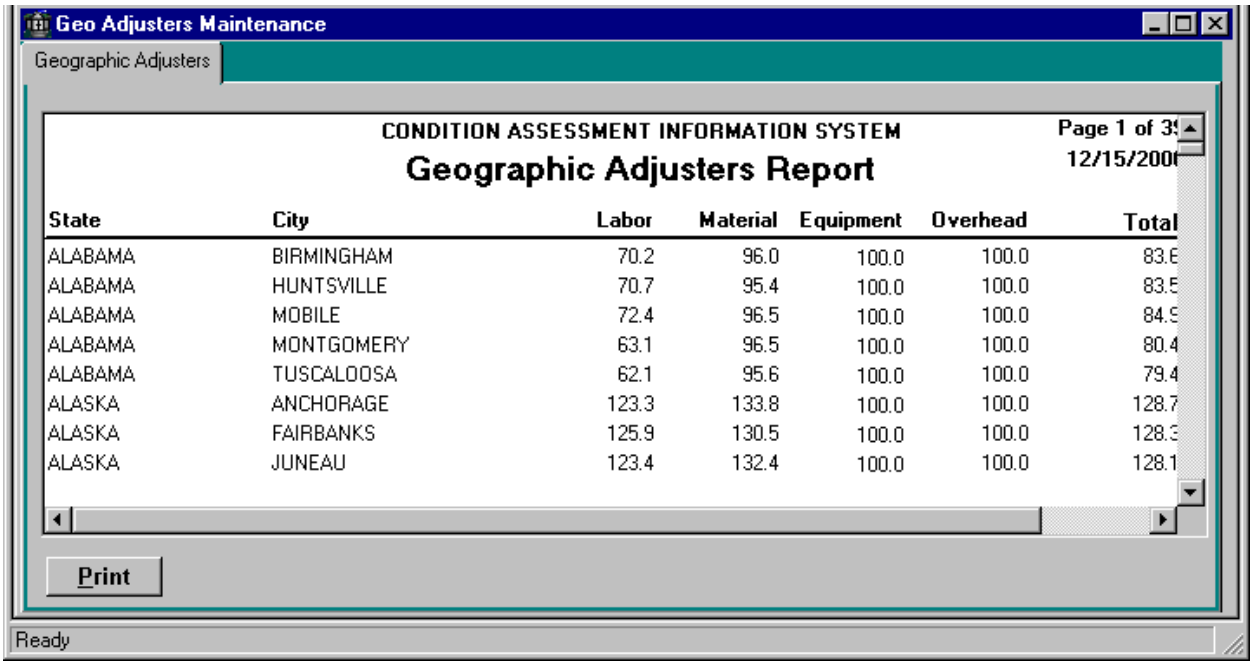


Figure 41 The Geo Adjusters Maintenance Window

This is a read-only window. To print the window, click on the **Print** button.

7.7.5 Importances

Select **Table Maint/Importances** to open the **Importance Maintenance** window shown in Figure 42. This lists the various codes and descriptions for problem severity.

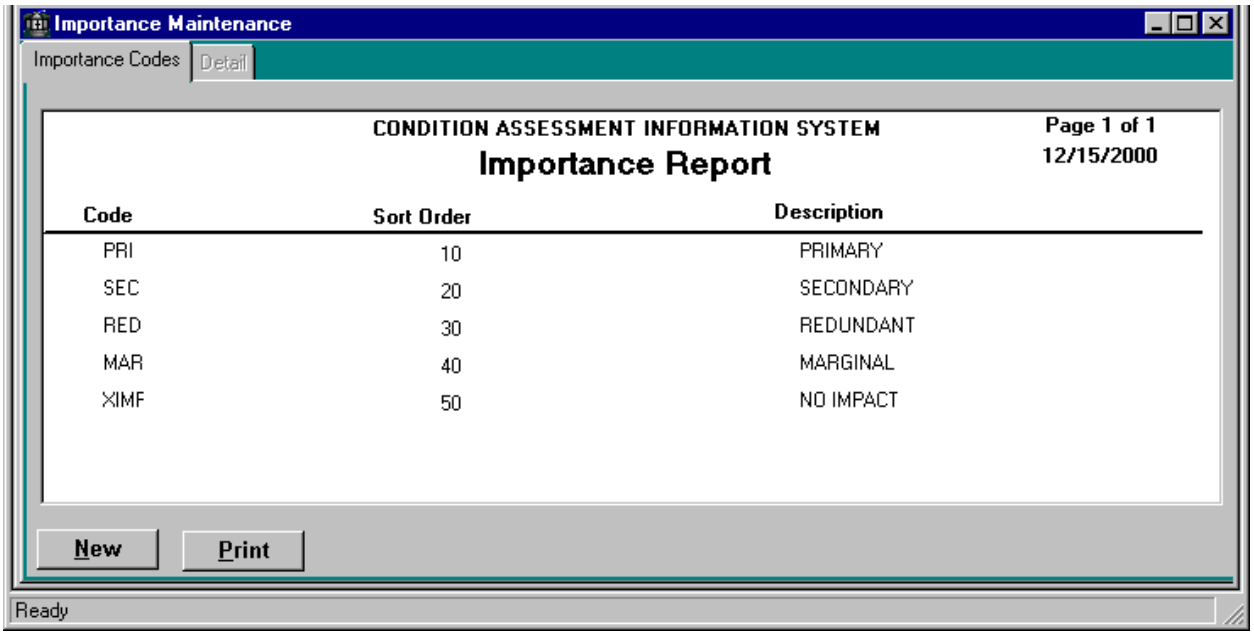


Figure 42 The Importance Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Importance Detail** window similar to that shown in Figure 43. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Importance Detail** window shown in Figure 43.

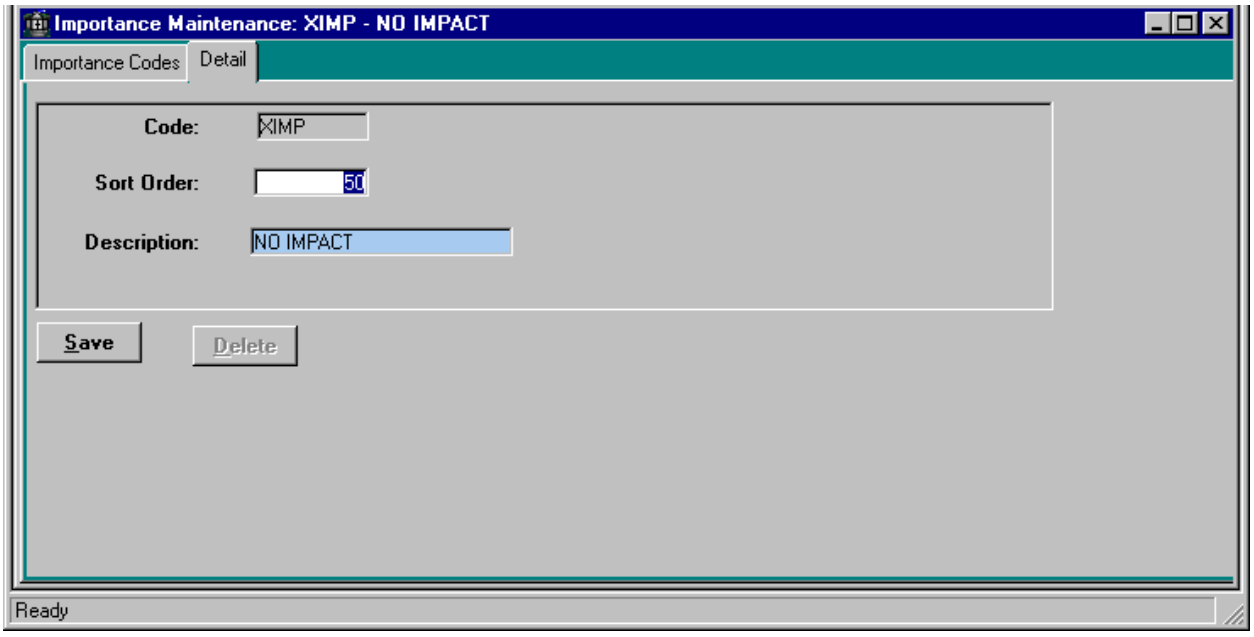


Figure 43 The Importance Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.6 Inspection Sources

Select **Table Maint/Inspection Sources** to open the **Inspection Source Maintenance** window shown in Figure 44.

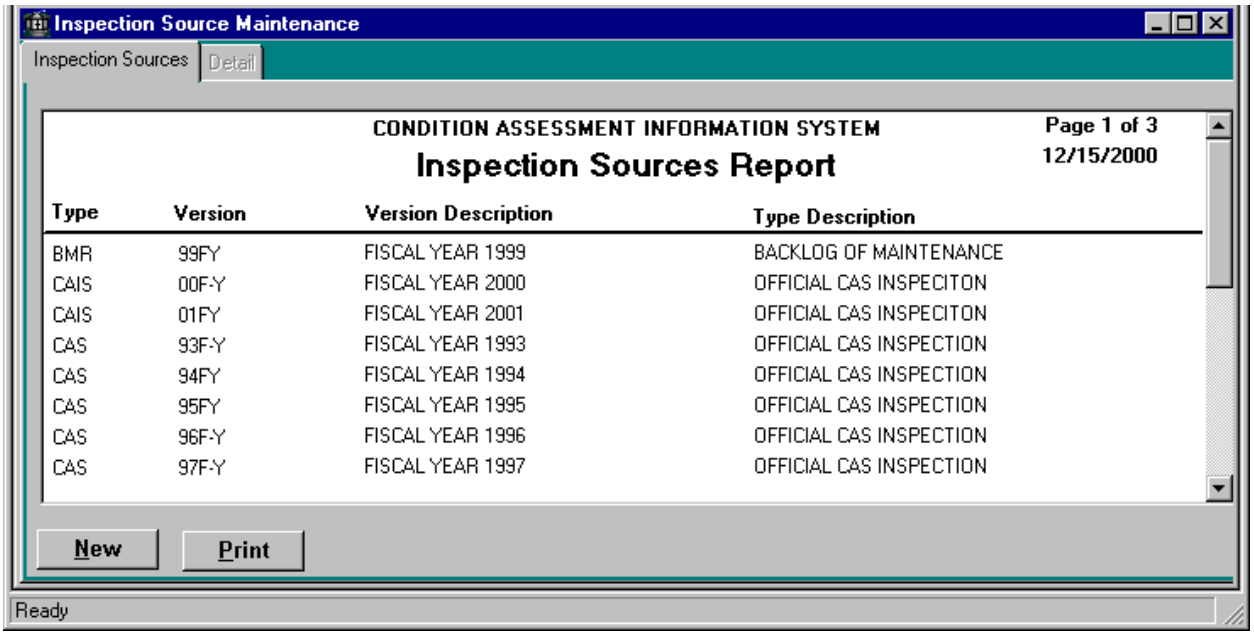


Figure 44 The Inspection Source Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Inspection Source Detail** window similar to that shown in Figure 45. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Inspection Source Detail** window shown in Figure 45.

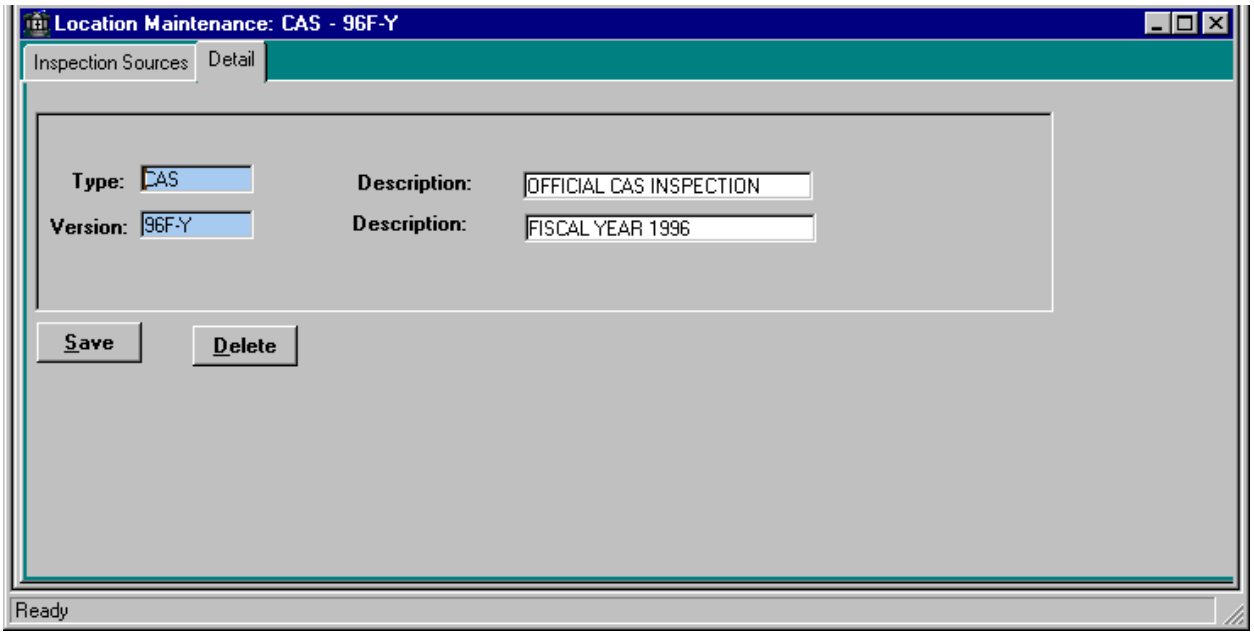


Figure 45 The Inspection Source Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.7 Inspector Estimate Limit

Select **Table Maint/Inspector Estimate Limit** to open the **Inspector Estimate Limit Maintenance** window shown in Figure 46.

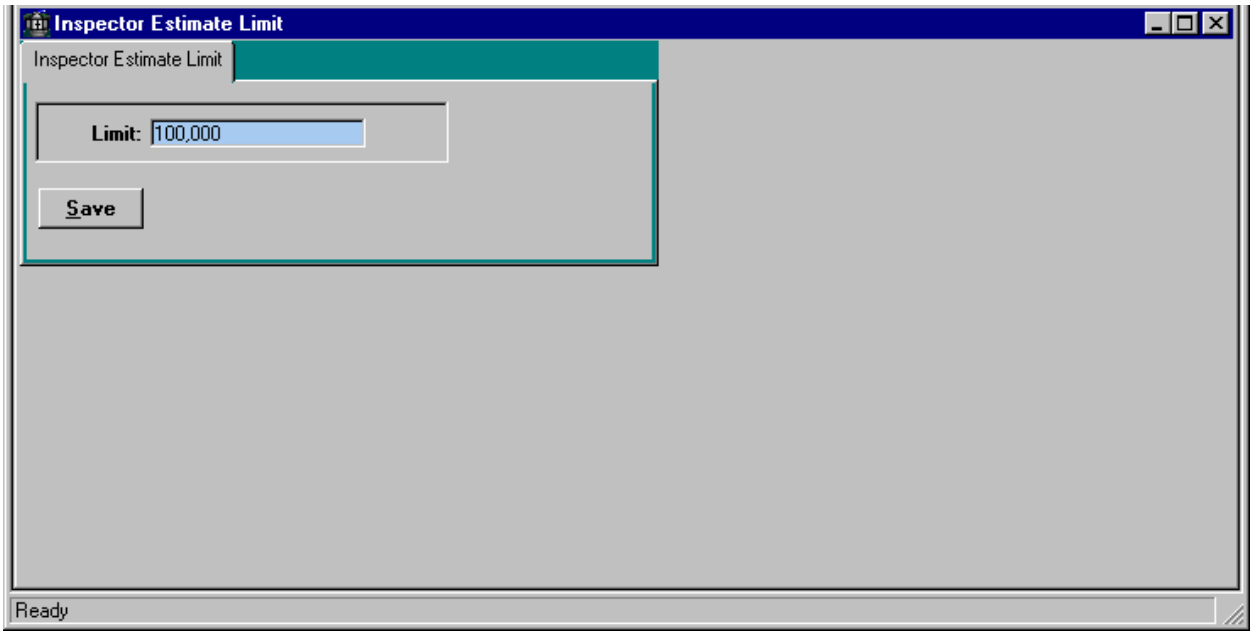


Figure 46 The Inspector Estimate Limit Maintenance Window

Enter any changes, then click on the **Save** button.

7.7.8 Inspectors

Select **Table Maint/Inspectors** to open the **Inspectors Maintenance** window shown in Figure 47.

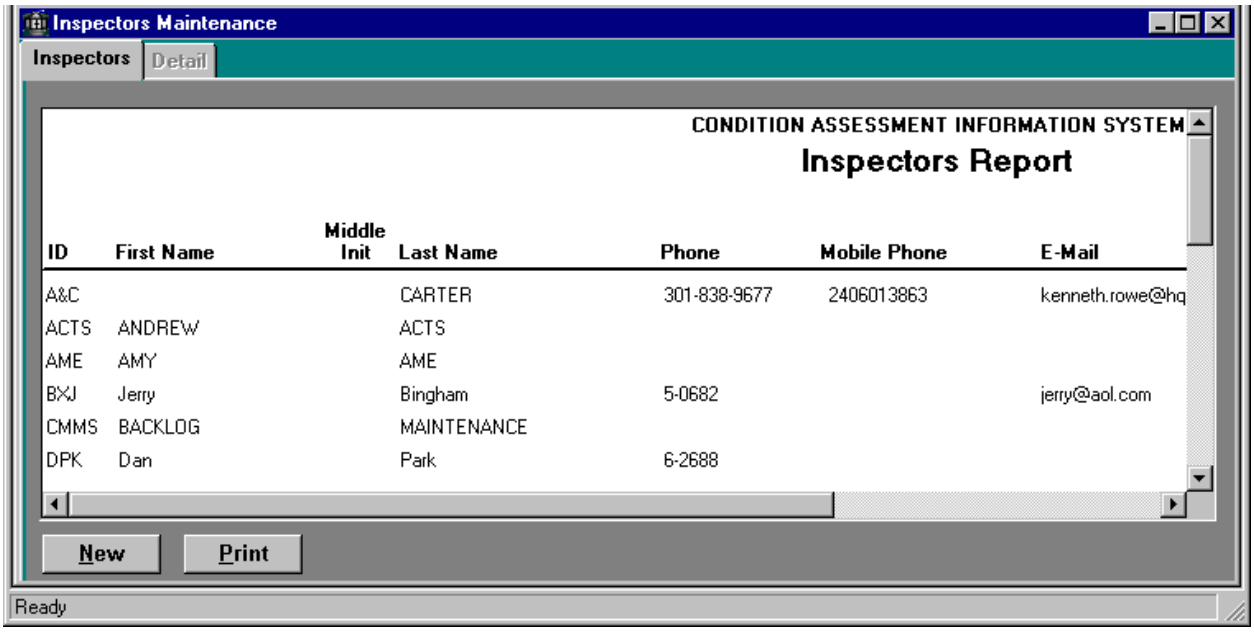


Figure 47 The Inspectors Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Inspectors Detail** window similar to that shown in Figure 48. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Inspectors Detail** window shown in Figure 48.

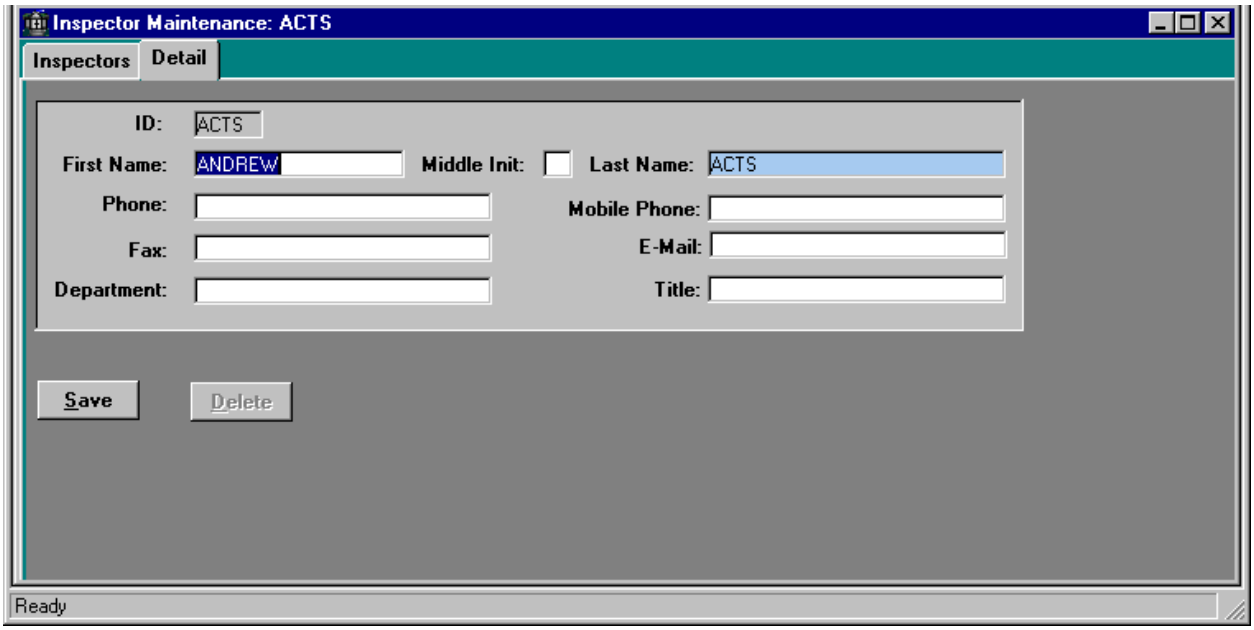


Figure 48 The Inspectors Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.9 Locations

Select **Table Maint/Locations** to open the **Location Maintenance** window shown in Figure 49.

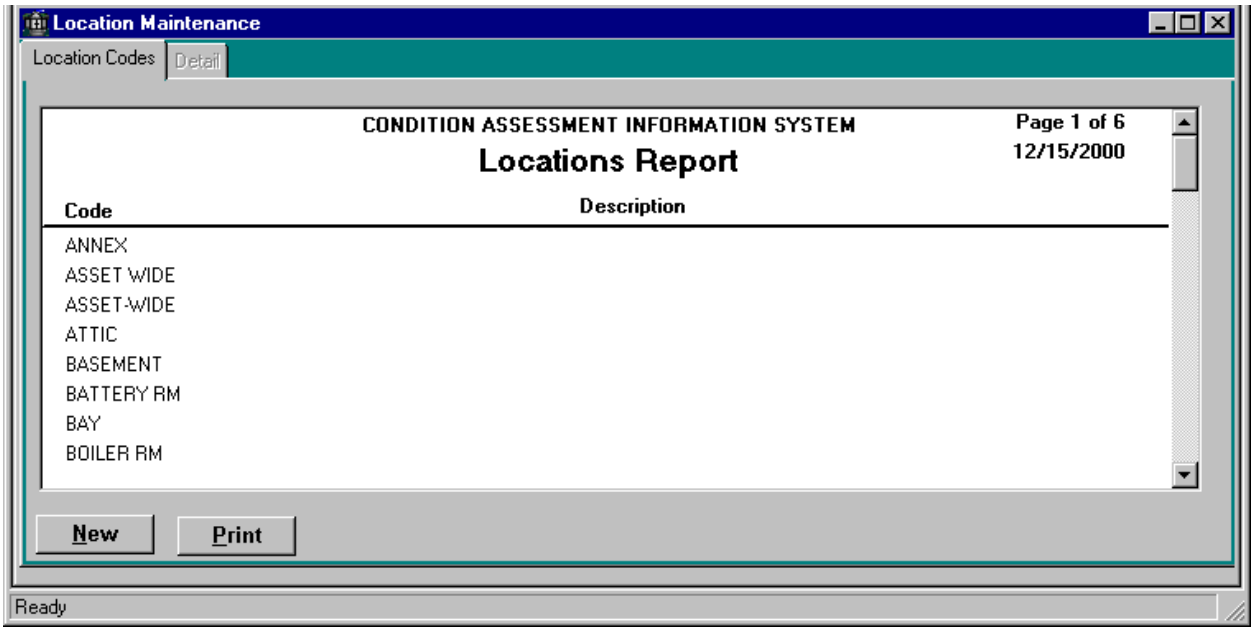


Figure 49 The Location Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Location Detail** window similar to that shown in Figure 50. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Location Detail** window shown in Figure 50.

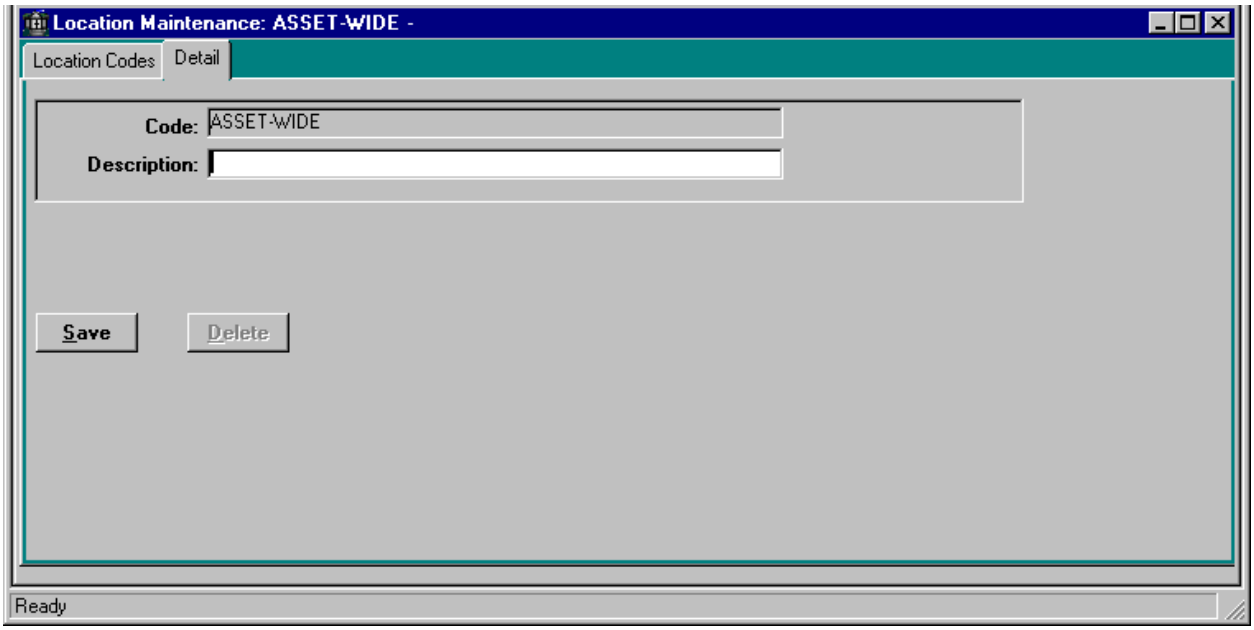


Figure 50 The Location Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.10 Model Type

Select **Table Maint/Model Type** to open the **Standard Model Types Maintenance** window shown in Figure 51.

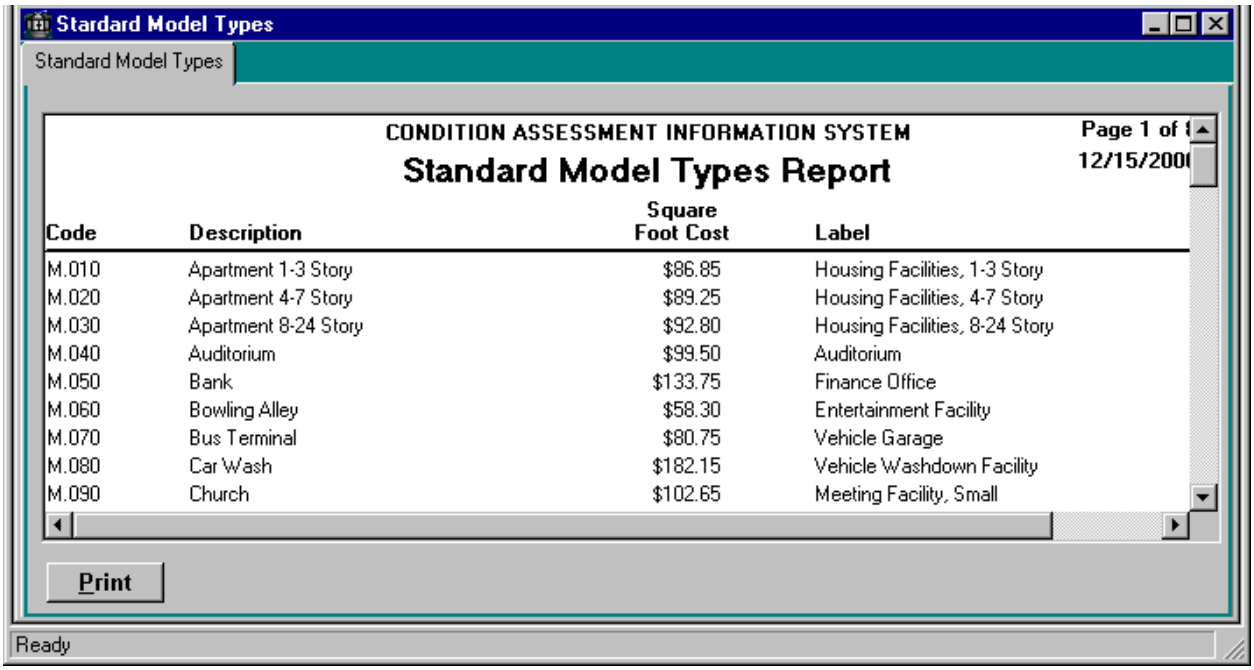


Figure 51 The Standard Model Types Maintenance Window

This is a read-only window. To print the window, click on the **Print** button.

7.7.11 Service

Select **Table Maint/Service** to open the **Service Maintenance** window shown in Figure 52.

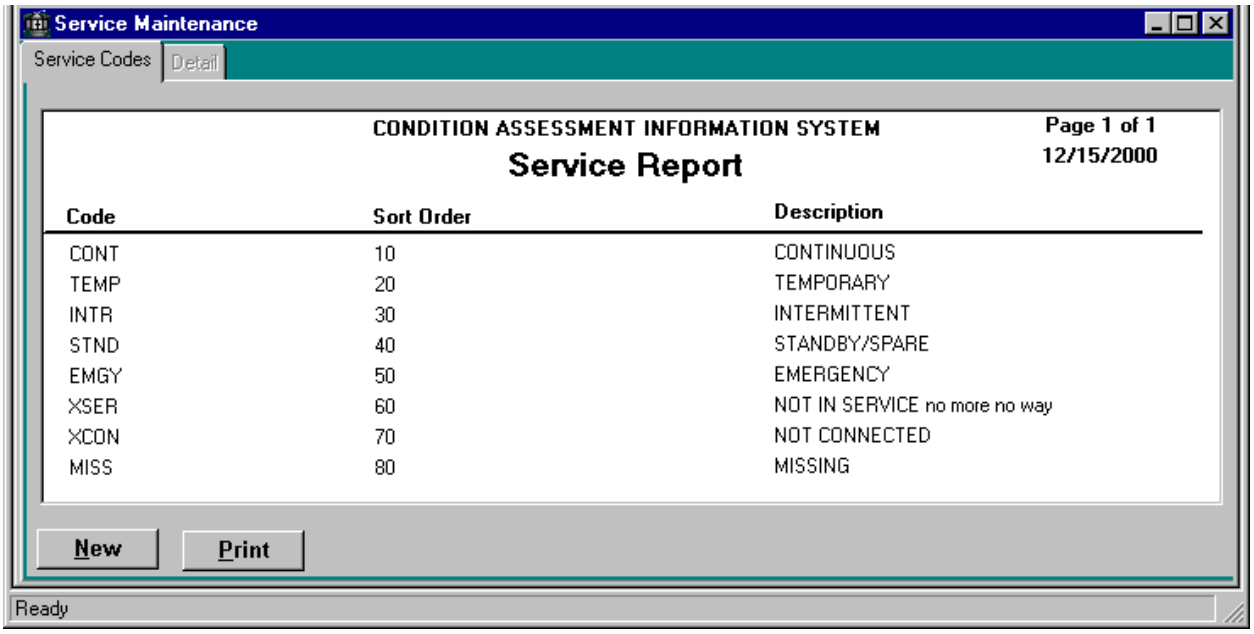


Figure 52 The Service Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Service Detail** window similar to that shown in Figure 53. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Service Detail** window shown in Figure 53.

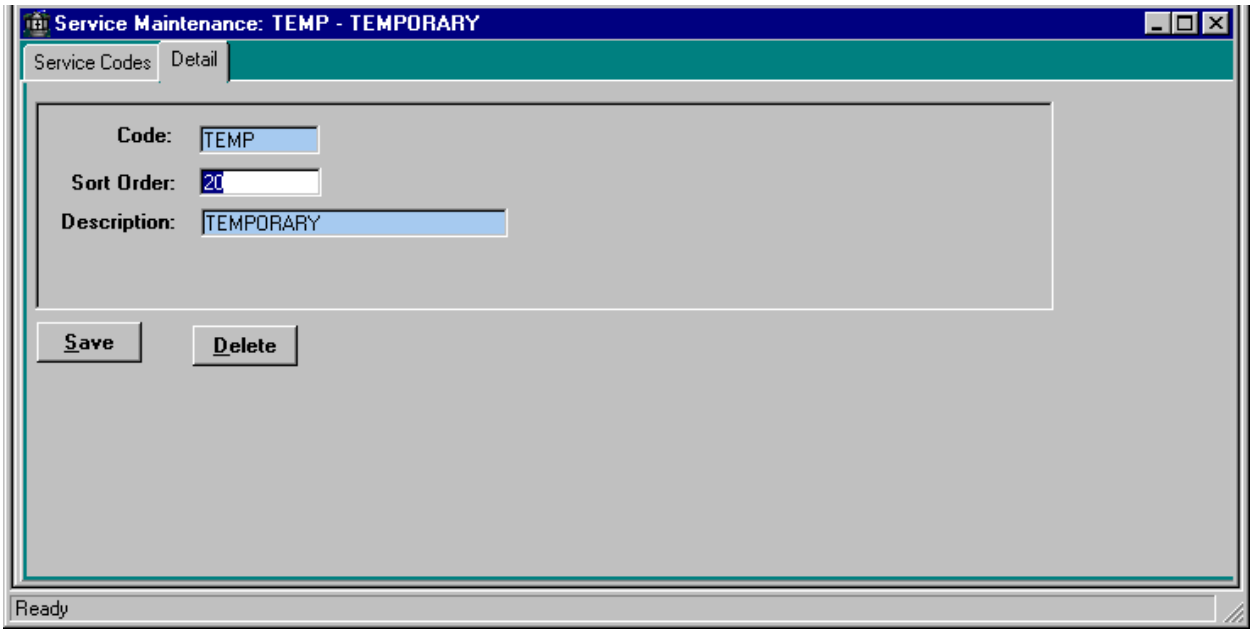


Figure 53 The Service Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.12 Site Defined

Select **Table Maint/Site Defined** to open the **Site Defined Maintenance** window shown in Figure 54.

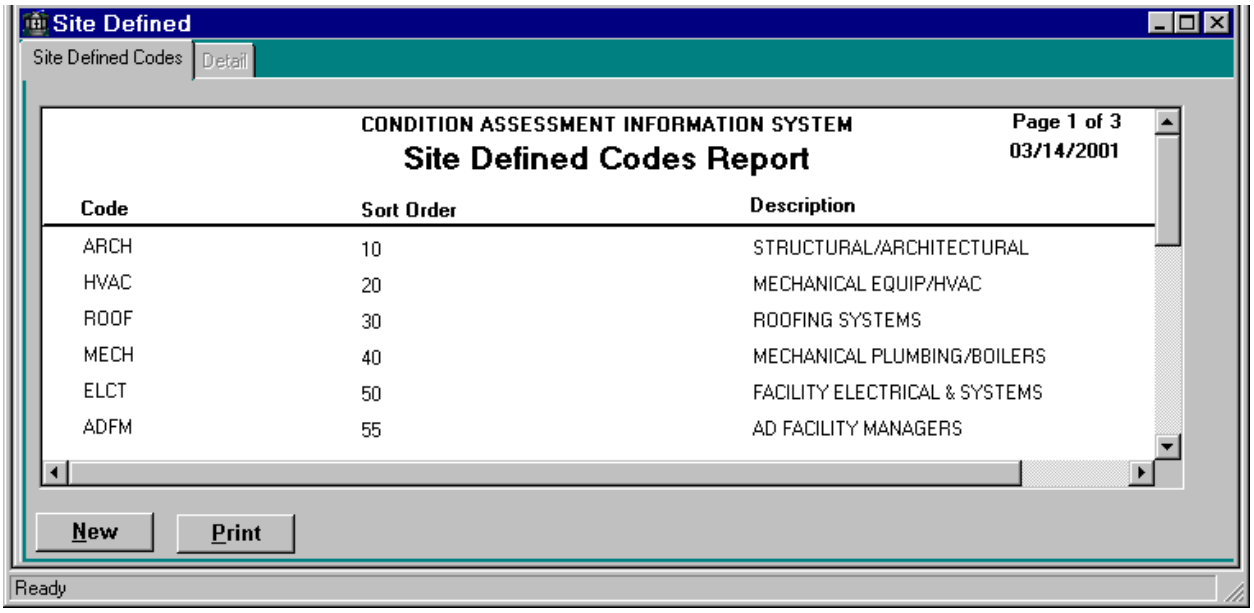


Figure 54 The Site Defined Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Site Defined Detail** window similar to that shown in Figure 55. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Site Defined Detail** window shown in Figure 55.

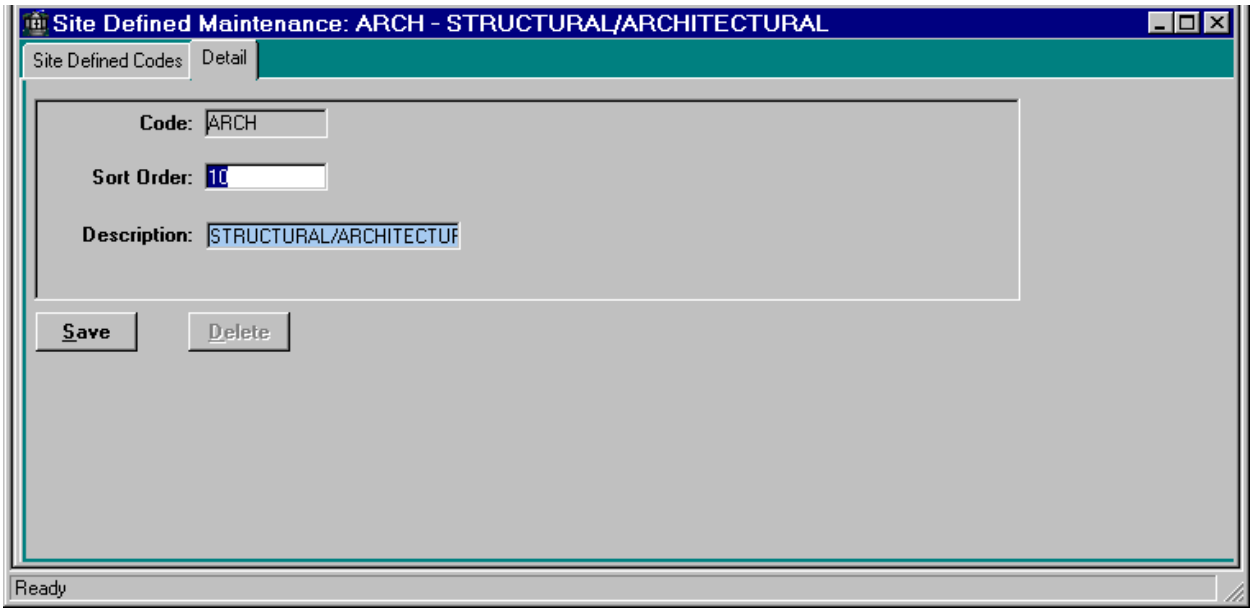


Figure 55 The Site Defined Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.13 Status

Select **Table Maint/Status** to open the **Status Maintenance** window shown in Figure 56.

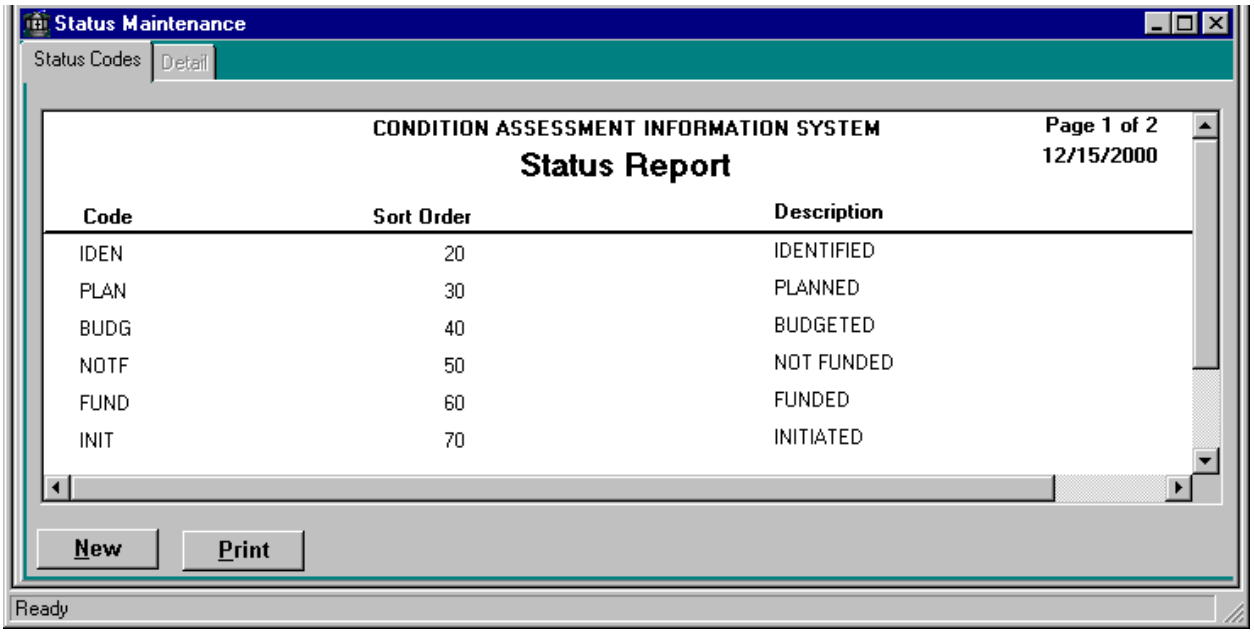


Figure 56 The Status Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Status Detail** window similar to that shown in Figure 57. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Status Detail** window shown in Figure 57.

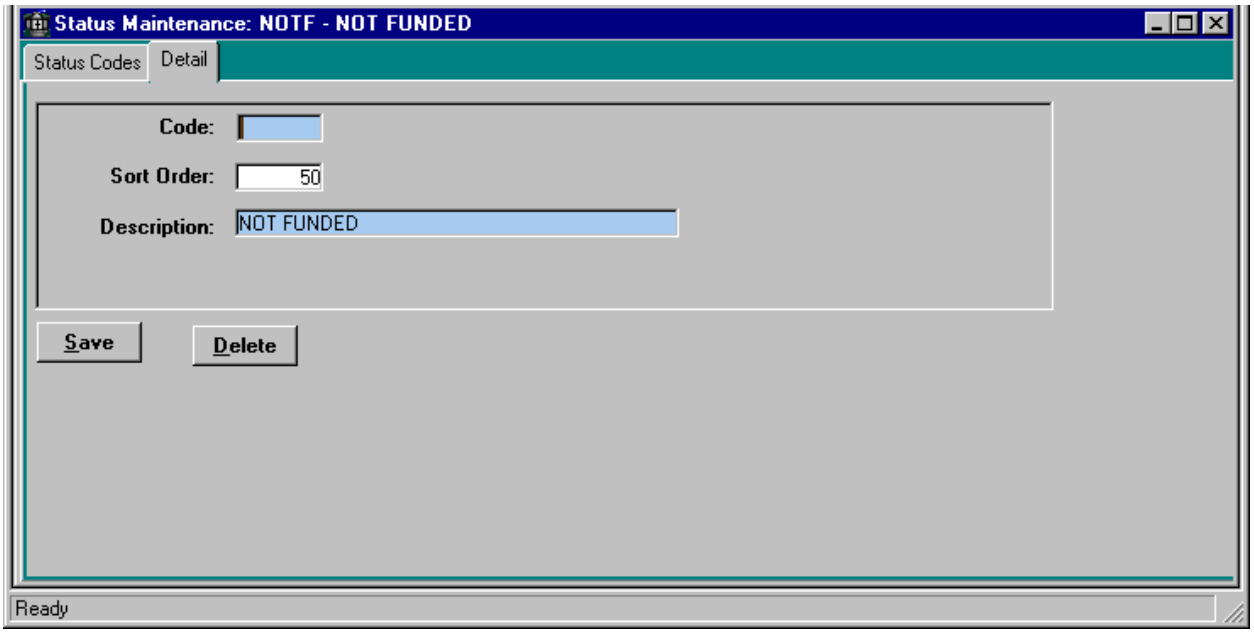


Figure 57 The Status Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.14 Repair Symptom

Select **Table Maint/Repair Symptom** to open the **Repair Symptom Maintenance** window shown in Figure 58.

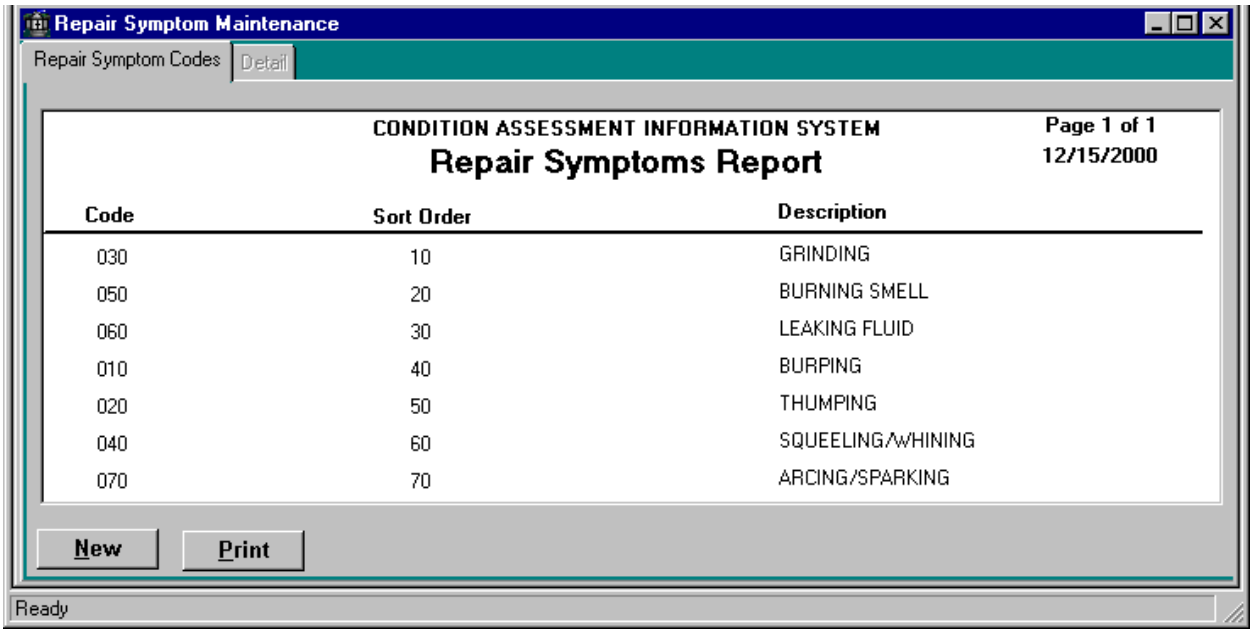


Figure 58 The Repair Symptom Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Repair Symptom Detail** window similar to that shown in Figure 59. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Repair Symptom Detail** window shown in Figure 59.

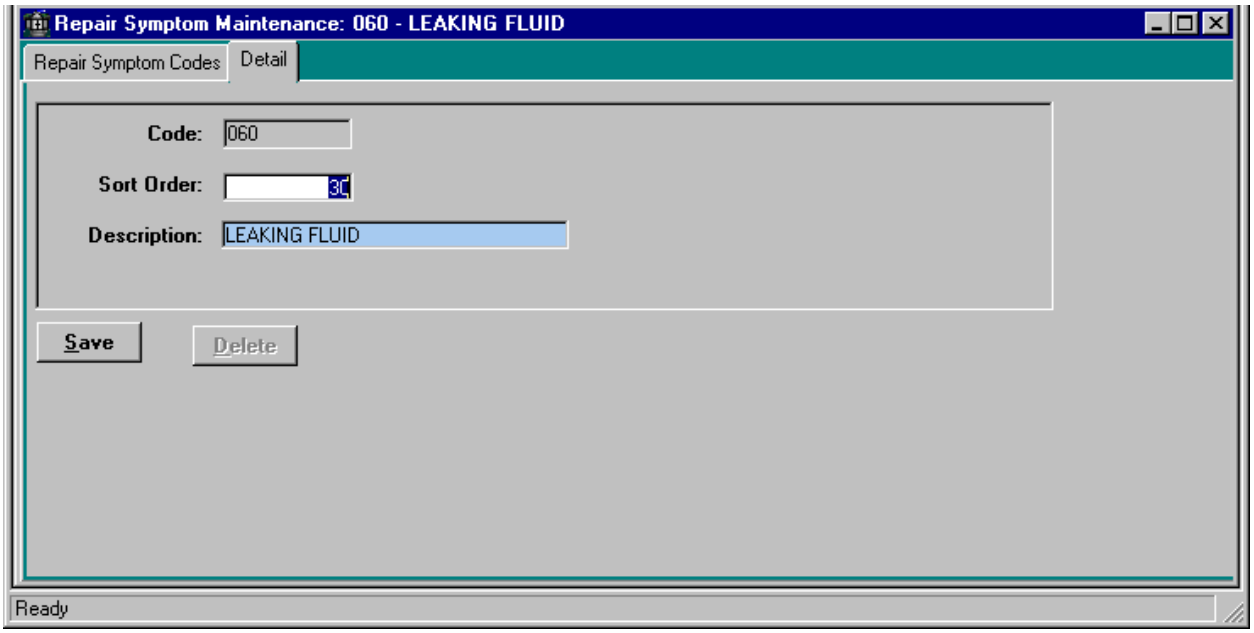


Figure 59 The Repair Symptom Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.15 Repair Task

Select **Table Maint/Repair Task** to open the **Repair Task Maintenance** window shown in Figure 60.

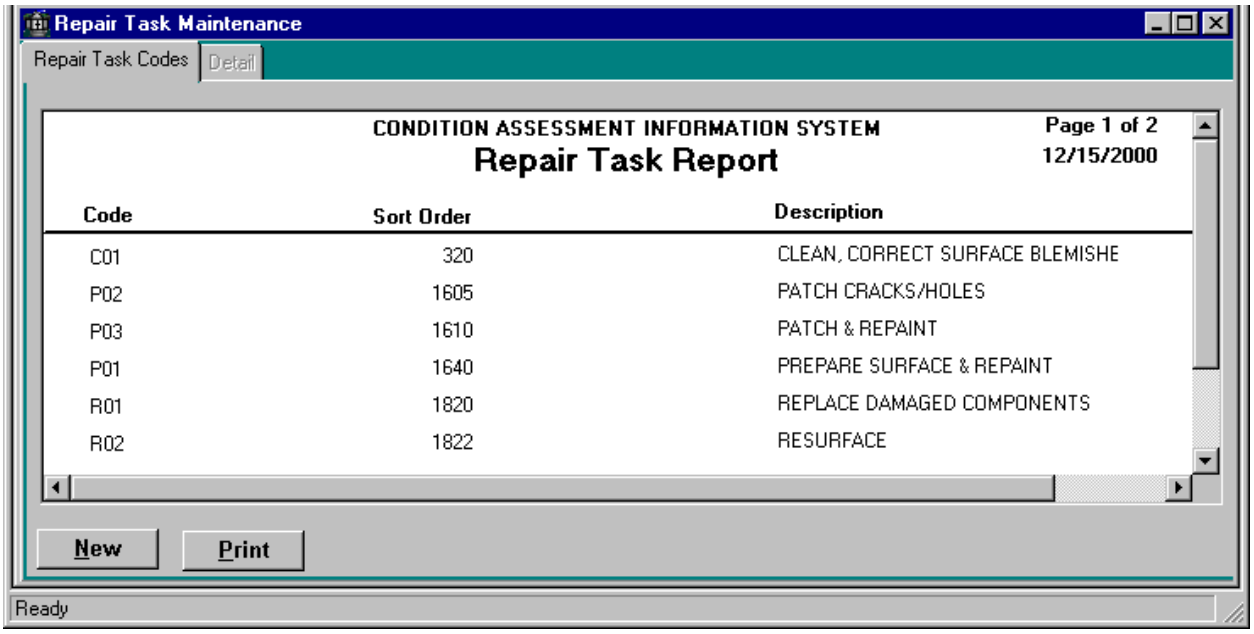


Figure 60 The Repair Task Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Repair Task Detail** window similar to that shown in Figure 61. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Repair Task Detail** window shown in Figure 61.

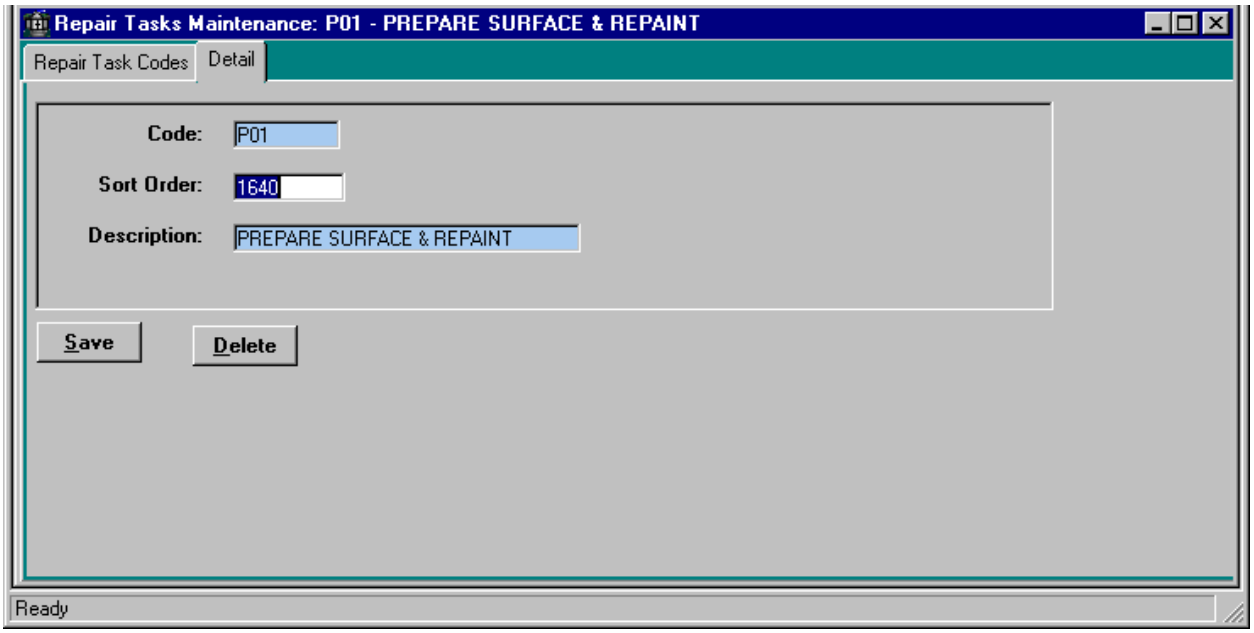


Figure 61 The Repair Task Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.16 Repair Cause

Select **Table Maint/Repair Cause** to open the **Repair Cause Maintenance** window shown in Figure 62.

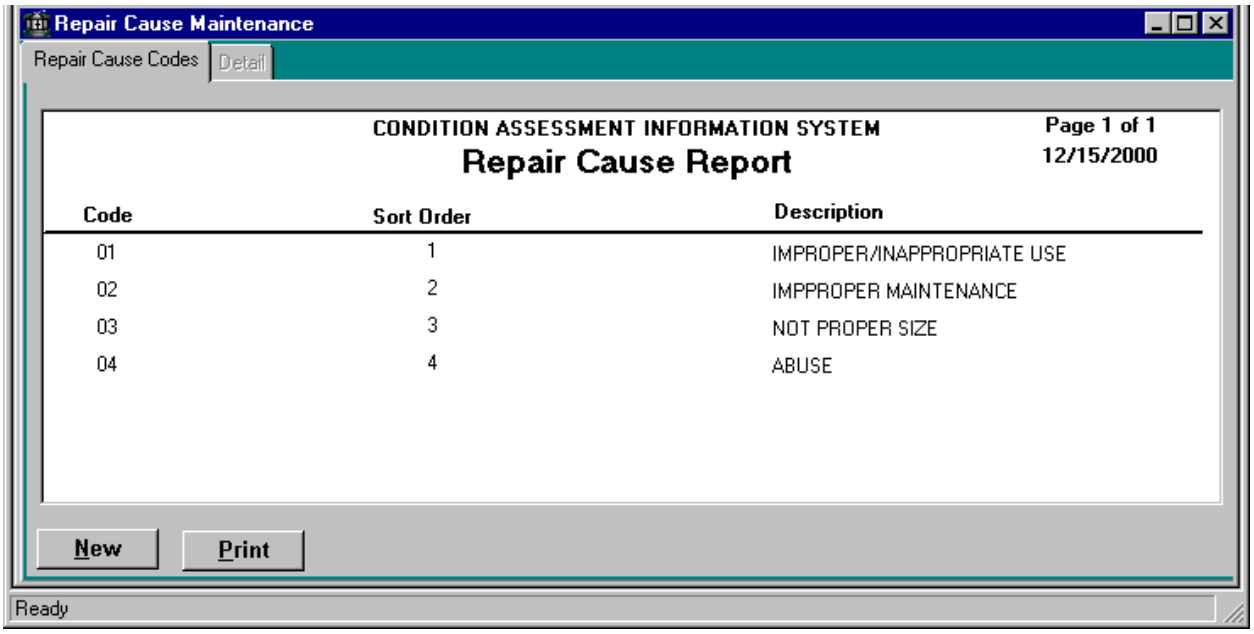


Figure 62 The Repair Cause Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Repair Cause Detail** window similar to that shown in Figure 63. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Repair Cause Detail** window shown in Figure 63.

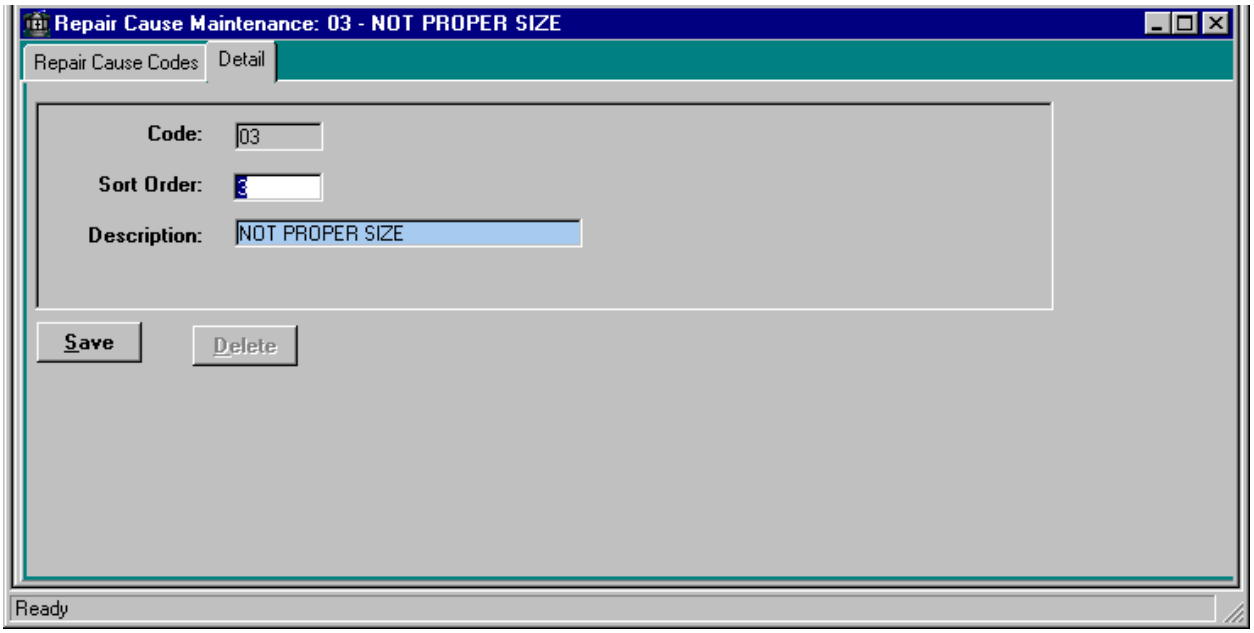


Figure 63 The Repair Cause Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.17 Repair Purpose

Select **Table Maint/Repair Purpose** to open the **Repair Purpose Maintenance** window shown in Figure 64.

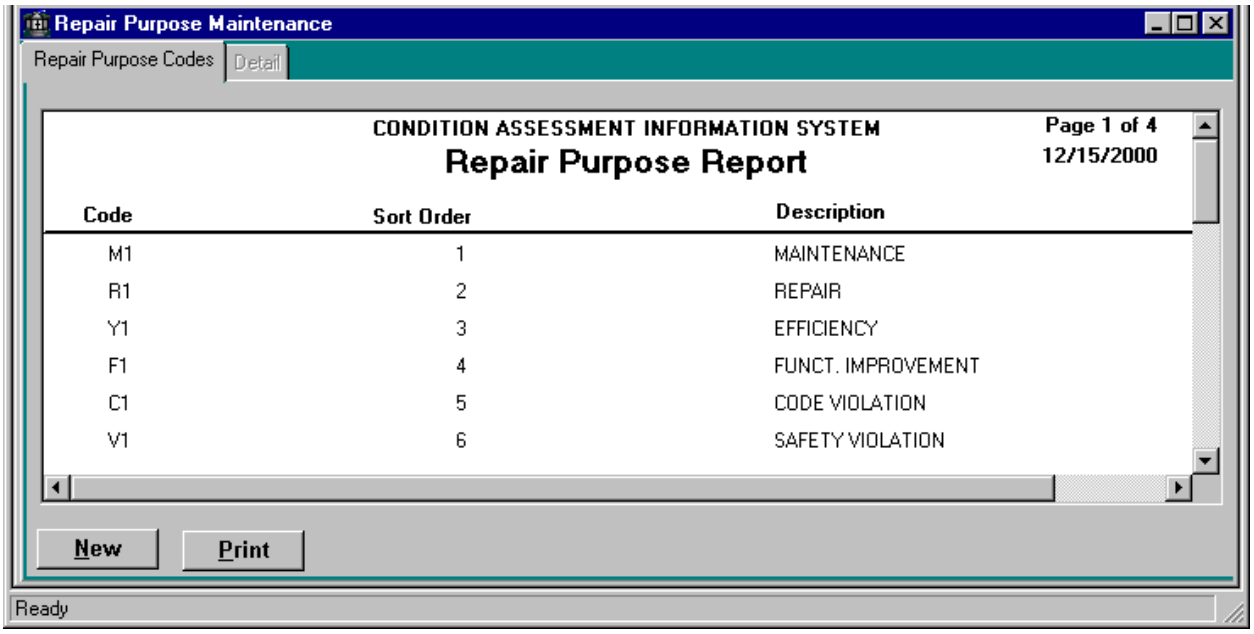


Figure 64 The Repair Purpose Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **Repair Purpose Detail** window similar to that shown in Figure 65. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **Repair Purpose Detail** window shown in Figure 65.

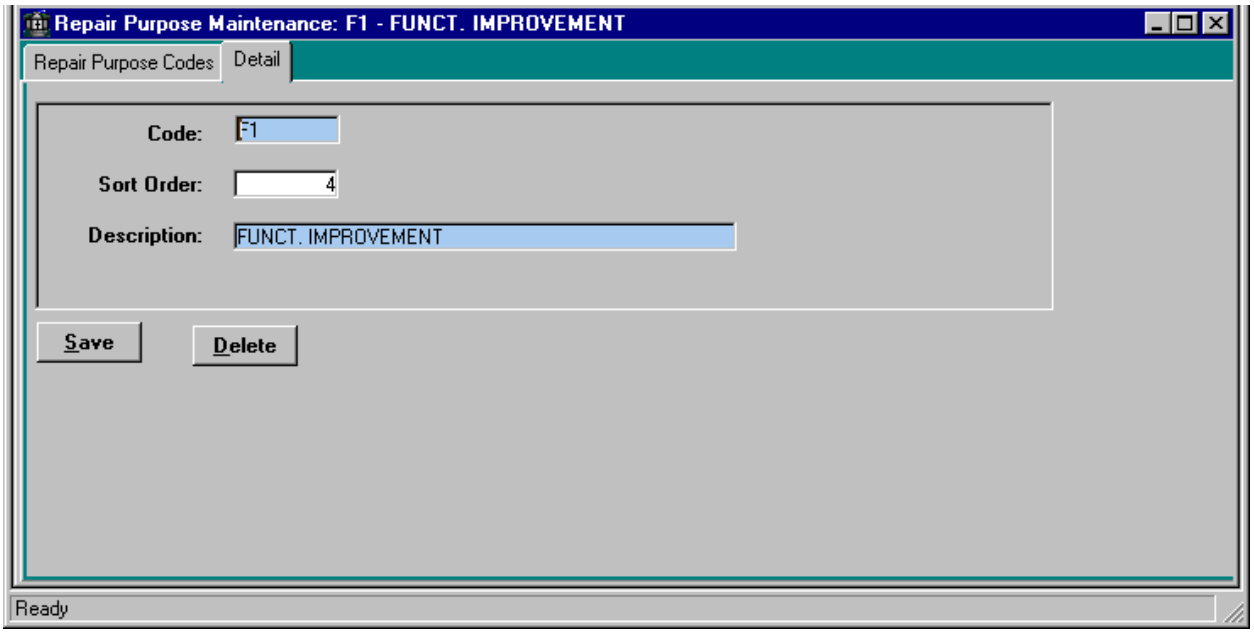


Figure 65 The Repair Purpose Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.7.18 Users

Select **Table Maint / Users** to open the **User Maintenance** window shown in Figure 66.

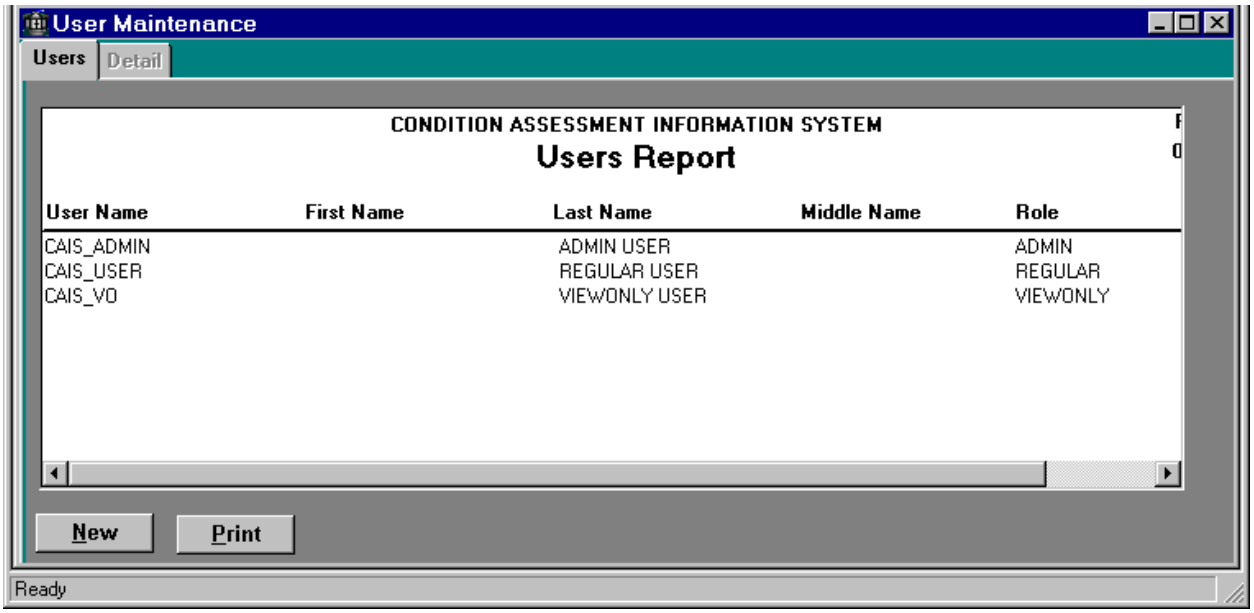


Figure 66 The User Maintenance Window

To print the window, click on the **Print** button. To create a parameter, click on the **New** button. This opens a blank **User Detail** window similar to that shown in Figure 67. To view a code's properties, select the code (it highlights, and the **Detail** tab's text turns dark gray). Click on the **Detail** tab to open the **User Detail** window shown in Figure 67.

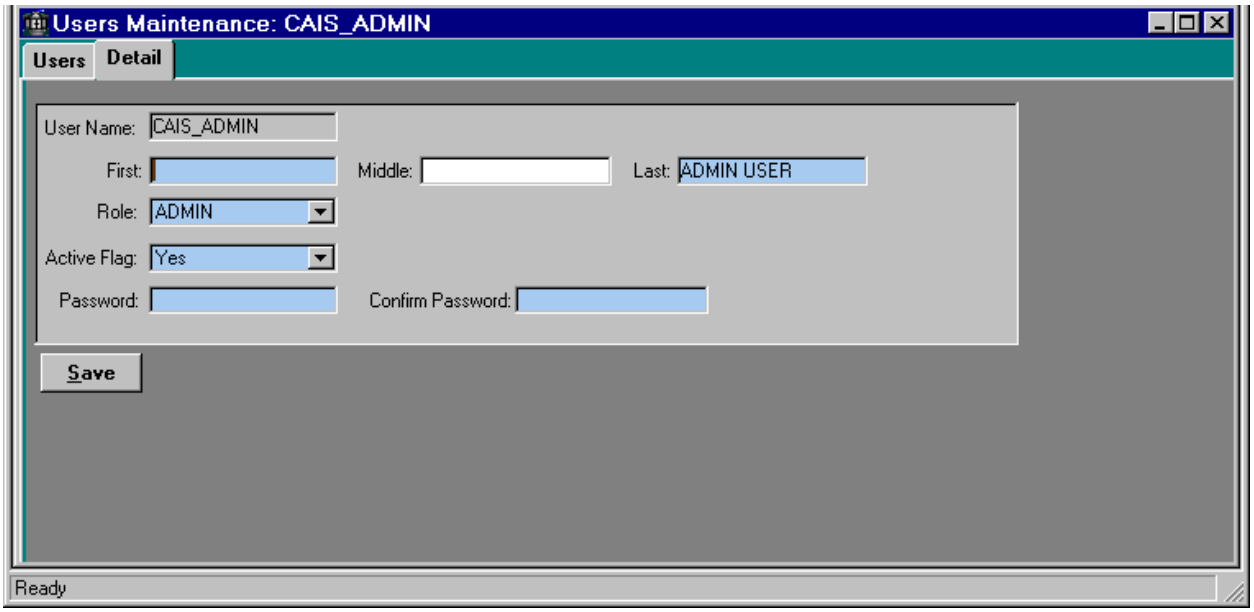


Figure 67 The User Detail Window

To enter changes, select the appropriate field, type the change, and then click on the **Save** button. To delete data, select the appropriate field, and then click on the **Delete** button. A window appears asking you to confirm the deletion. Click on **Yes** to confirm the deletion.

7.8 The Change Password Menu

Select the **Change Password** menu to open the **Change Password** window shown in Figure 68.

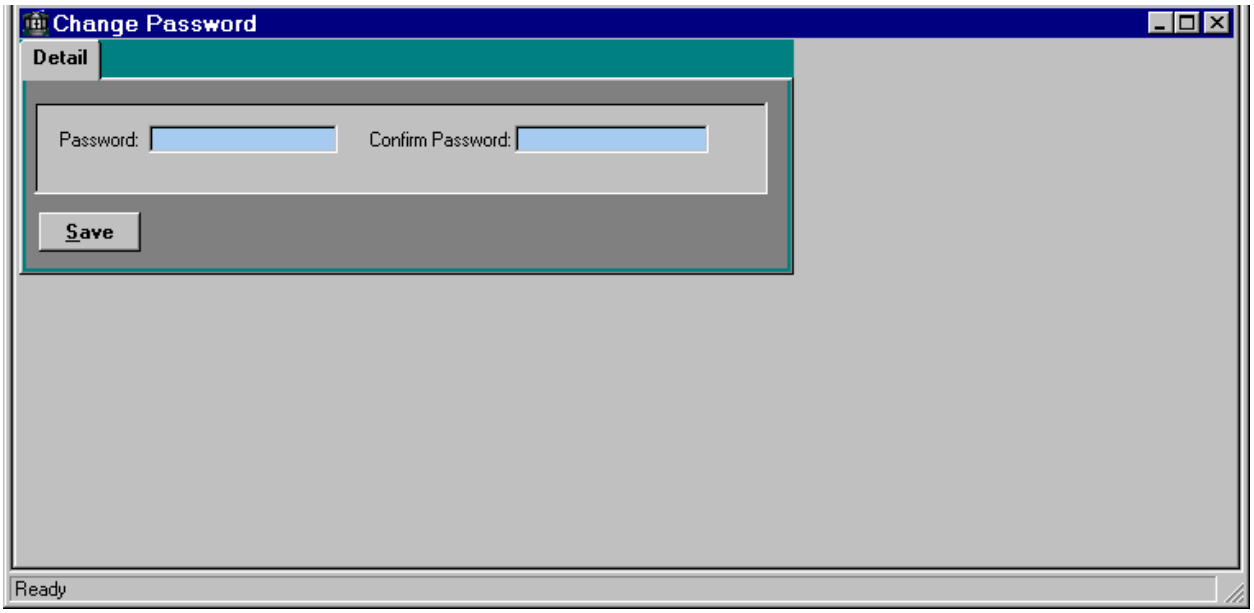


Figure 68 The Change Password Window

Type your new password in the **Password** field, and then type it again in the **Confirm Password** field. Click on **Save** to confirm the change.

7.9 The Help Menu

Use the **Help** menu to access the CAIS help system.

7.9.1 Help Index

Note: This function is under development.

7.9.2 Search for Help On

Note: This function is under development.

7.9.3 About

Select **Help/About** to review information pertinent to the version of CAIS you are running as shown in Figure 69.

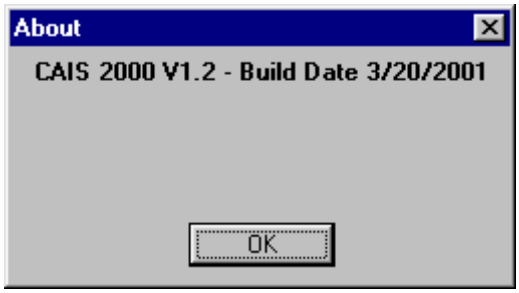


Figure 69 The Help About CAIS Window